

City of Flagstaff Active Transportation Master Plan



DRAFT Working Paper 7 Missing sidewalk inventory and prioritization

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Introduction

Methodology

The goal of this project is to outline a program to complete missing sidewalks in Flagstaff that will fill the greatest need and provide the most benefit.

The process consists of five linear steps:

- 1 First, an **inventory** of existing and missing sidewalks is conducted to identify major streets where sidewalks are needed.
- 2 Second, missing sidewalks are divided into **categories** that describe how they might be completed in the future.
- 3 Third, a methodology is developed to **prioritize** missing sidewalk segments based on where people are most likely to walk, where people most need to walk, and where the walking environment would most benefit from added sidewalks.
- 4 Fourth, a list of **recommended projects** for the short, medium, and long terms is culled from the prioritized list of sidewalk projects
- 5 Finally, **cost estimates** are prepared for all of the missing sidewalks so funding can be sought.

Summary of findings

There are 291.6 miles of existing sidewalks along public streets in the City of Flagstaff.

There are 60.4 miles of sidewalks missing along major streets.

Sidewalks are present along a little under two-thirds (64.1 percent) of Flagstaff's public street miles, and are missing along slightly more than one-third (35.9 percent).

For planning purposes, it is useful to divide missing sidewalks into four categories to describe how they might be completed in the future. The four categories are:

- Roadway projects: the adjoining street is not complete and has not been built out to its ultimate width.
- FUTS projects: situations where a FUTS trail is planned adjacent to the street and will take the place of the public sidewalk.

- Programmed projects: construction of the missing sidewalk is already programmed, in design, or under construction as part of another project.
- Sidewalk projects: includes missing sidewalks that do not fall into one of the above categories, and consequently have no opportunity to be constructed as part of another project. Completion of these missing segments must be planned, funded, and implemented as stand-alone projects.

Missing sidewalks have been generally prioritized based on three measures: pedestrian generators and attractors, social factors for walking, and the quality of the pedestrian environment.

The final step in the prioritization process involves a final review of individual projects to consider items that may not have been included in the three measures. These items include land uses in the immediate area that would be served by the new sidewalk, access to schools and transit stops, constructability and technical issues, the presence of other pedestrian facilities in the vicinity, local and anecdotal knowledge of the need for the sidewalk, and the results of previous walking and biking surveys.

The final evaluation makes project-by-project recommendations for construction of missing sidewalks in the short (within 5 years) medium (5 to 10 years) and long terms (more than 10 years).

- Projects on the recommended short term list would complete 3.3 miles of missing sidewalks, and would cost an estimated \$2.3 million.
- Projects on the recommended medium term list would complete 15.0 miles of missing sidewalks and cost an estimated \$9.9 million.
- Projects on the recommended long term list would complete 24.7 miles of missing sidewalks and cost an estimated \$14.8 million.

The total cost to complete all missing sidewalks along major streets in the City of Flagstaff is estimated at \$37.5 million. However, not all of the missing sidewalks have to be completed in order to make a significant difference to the pedestrian environment in Flagstaff. This document identifies a methodology for prioritization that identifies the projects that will provide the greatest benefit and fill the greatest need.

Sidewalk inventory

As a starting point for this project, City staff has conducted a systematic inventory of public sidewalks throughout Flagstaff. The inventory is comprised of three components:

- Inventory of existing sidewalks
- Inventory of missing sidewalks along major streets
- Street centerline data indicating sidewalk presence

Existing sidewalks

The location of existing sidewalks was derived from the City of Flagstaff aerial photography, which was taken most recently in April 2013. When the City's aerial photography is inconclusive regarding the presence or exact location of sidewalks, other data sources were consulted, including ESRI aerial photography and Google Maps and Street View. If these sources were out of date, field reviews were conducted. All of the collected sidewalk data is stored in a geographic information system (GIS) geodatabase.

What's included

In general terms, only facilities with the following characteristics are included in the sidewalk inventory:

- Designed specifically for the use of pedestrians
- Paved in concrete or asphalt
- Parallel to a public street and within the public right-of-way or an easement
- Separated from the roadway, either vertically by a curb or horizontally by a parkway strip
- Within City of Flagstaff limits

Sidewalks on the campus of Northern Arizona University (NAU) are included in the inventory when they are adjacent to campus streets. Flagstaff Urban Trails System (FUTS) trails are also included when they are paved, parallel to a public street, and take the place of a sidewalk.

What's not included

Other existing sidewalks that are not part of the inventory include:

- Sidewalks along private streets

- Private sidewalks, for example a sidewalk through a parking lot at a shopping center
- Public sidewalks not adjacent to streets, such as in parks
- Sidewalks on the NAU campus that are not adjacent to streets

Sidewalks falling into these categories were inventoried separately but are not included in this analysis.

Additionally, this analysis considers only the presence of sidewalk along a public street. It does not consider the condition, functionality, or adequacy of existing sidewalks.

Sidewalk statistics

Existing sidewalks are depicted on Map 1 on the following page. Table 1 summarizes miles of existing sidewalks by the street functional class, and Table 2 breaks down existing sidewalks by the agency responsible for maintenance of the adjoining street.

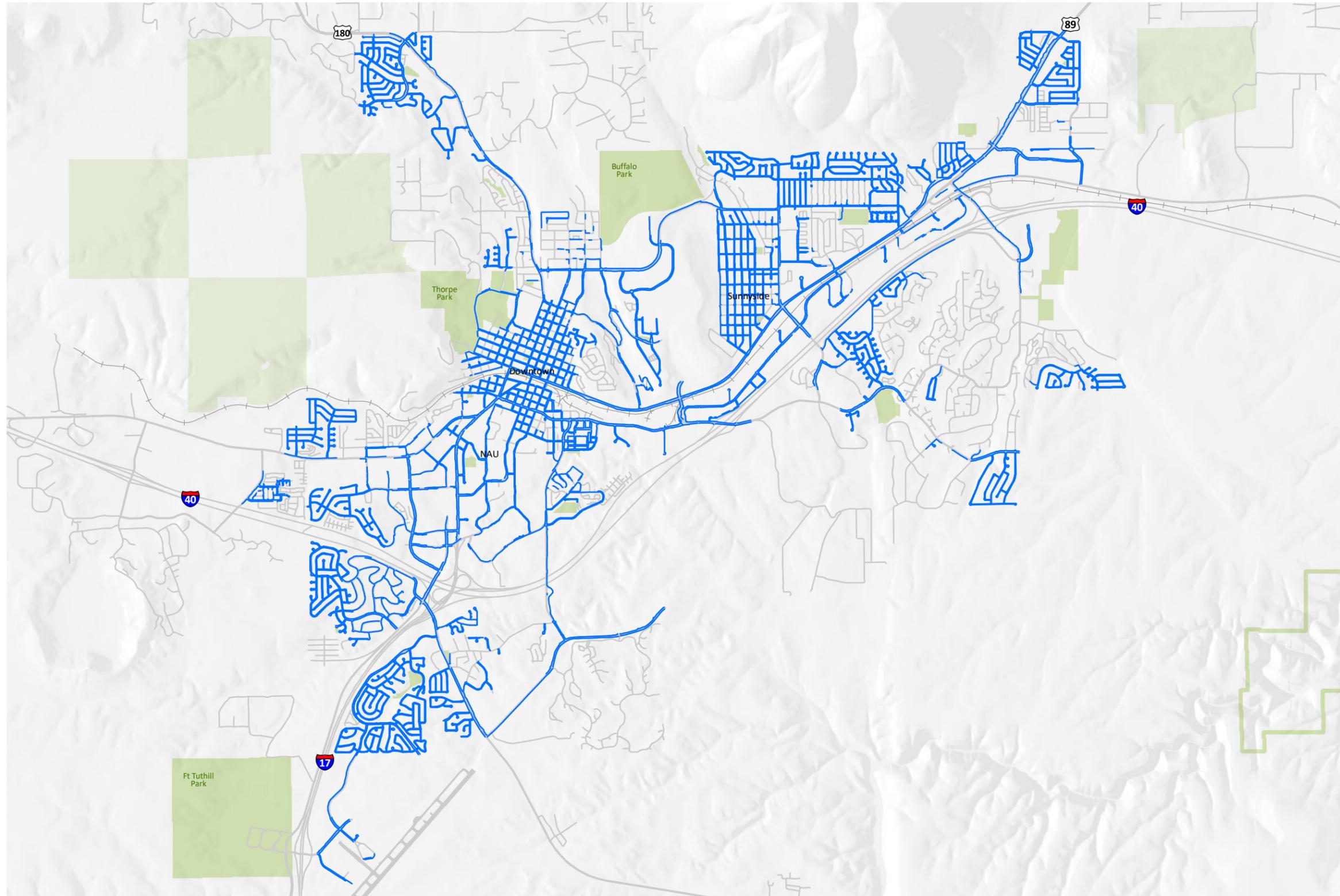
The inventory reveals that there are 291.6 miles of sidewalks along public streets in the city. Slightly more than half (147.2 miles, or 50.5 percent) of the total sidewalk miles are located along local residential streets. The vast majority of sidewalks (91.4 percent) are located along City streets; only minor percentages are along ADOT roads or streets on the NAU campus.

Table 1 Existing sidewalks by street functional class

<i>Functional class</i>	<i>Miles</i>	<i>Percent</i>
Major Arterial	18.7	6.4
Minor Arterial	30.9	10.6
Major Collector	35.2	12.1
Minor Collector	44.1	15.1
Commercial Local	10.9	3.7
Industrial Local	4.8	1.6
Residential Local	147.2	50.5
Total	291.6	100.0

Table 2 Existing sidewalks by street jurisdiction

<i>Jurisdiction</i>	<i>Miles</i>	<i>Percent</i>
COF	266.6	91.4
ADOT	17.2	5.9
NAU	7.8	2.7
Total	291.6	100.0



Map 1
Existing sidewalks

Sidewalks
Existing



Missing sidewalks along major streets

The second component of the inventory covers sidewalks that are missing along major streets.

Major streets are defined as streets with a functional class designation of major or minor arterial, major or minor collector, and commercial local, and are illustrated on Map 25 of the Regional Plan. Local residential and industrial streets are not included in the missing sidewalk inventory.

Map 2 on page 8 illustrates missing sidewalks identified in the inventory, and Tables 3 and 4 summarize missing sidewalk by the functional class of the street, and by the operation or maintenance jurisdiction of the adjoining street.

Based on this inventory, there is a total of 60.4 miles of missing sidewalks along major streets in Flagstaff. Most are located along collector and minor arterial roads. Only a small percentage are located along major arterial roadways (3.3 miles or 5.5 percent of the total) or along local commercial streets (2.1 miles or 3.4 percent of the total).

In terms of the maintenance jurisdiction of the street, most missing sidewalks are located along City streets (53.7 miles or 88.9 percent of the total). A smaller portion are located along ADOT roadways (5.7 miles or 9.4 percent of the total), and there is only 1 mile of missing sidewalk along NAU streets (1.7 percent of the total).

A number of neighborhoods in Flagstaff were built entirely without sidewalks on interior streets. These neighborhoods include:

- Bow & Arrow
- Coconino Estates
- Country Club
- Elk Run
- Equestrian Estates
- Grandview
- Lakeside Acres
- Lower Greenlaw
- Lynwood

Table 3 Missing sidewalks by street functional class

<i>Functional class</i>	<i>Miles</i>	<i>Percent</i>
Major Arterial	3.3	5.5
Minor Arterial	20.8	34.5
Major Collector	15.9	26.4
Minor Collector	18.2	30.2
Commercial Local	2.1	3.4
Total	60.4	100.0

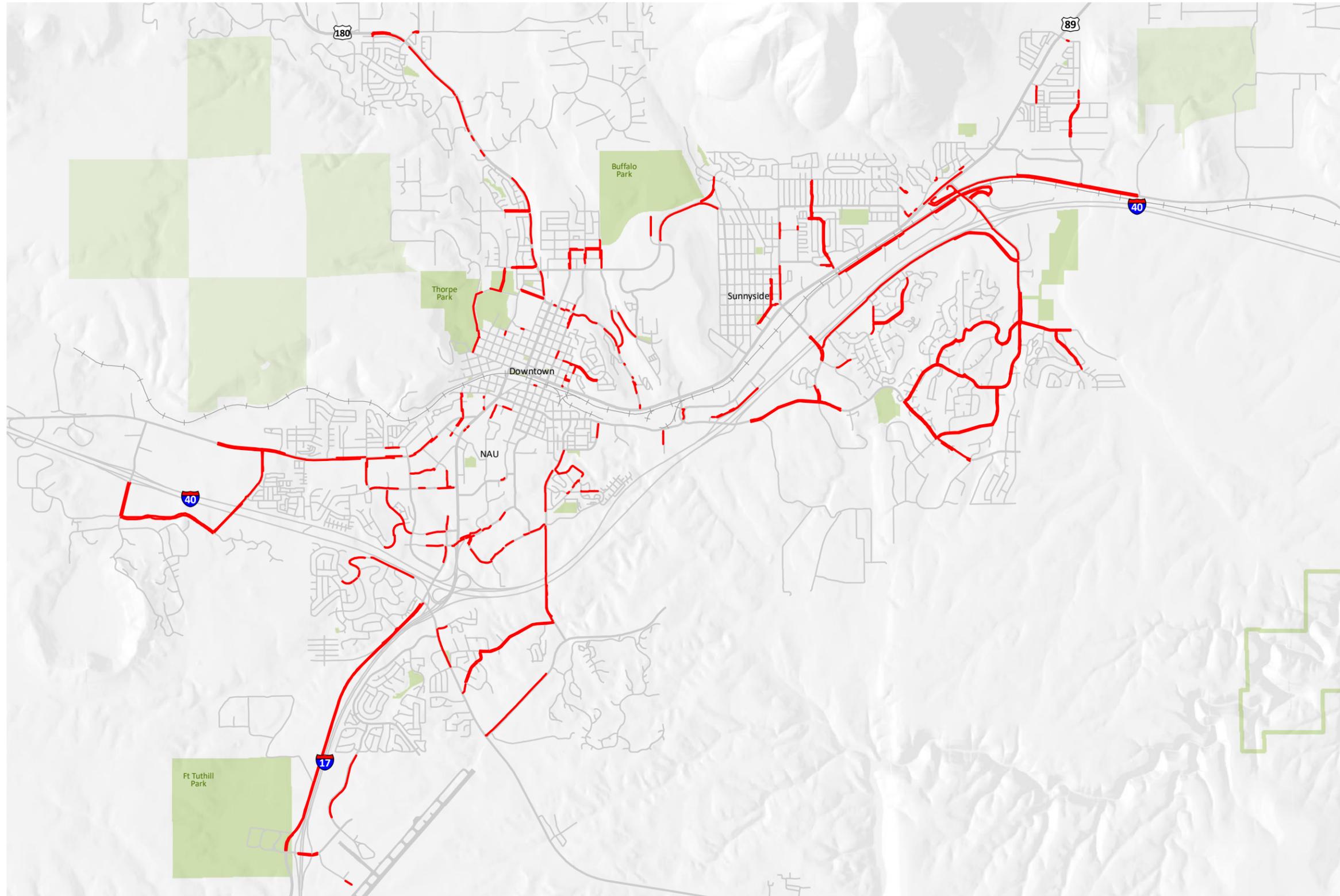
Table 4 Missing sidewalks by street jurisdiction

<i>Jurisdiction</i>	<i>Miles</i>	<i>Percent</i>
City	53.7	88.9
ADOT	5.7	9.4
NAU	1.0	1.7
Total	60.4	100.0

- Paradise Hills
- Pine Park Manor

Several other neighborhoods have partial or incomplete sidewalks, including:

- Cherry Hill
- Brannen Homes
- Southside
- Townsite
- Hospital Hill



Map 2
**Missing sidewalks
on major streets**

Sidewalks
Missing



Sidewalk status by street centerline

For the final component of the sidewalk inventory, information regarding the presence of sidewalks was collected based on street centerlines. All public street segments are coded according to one of four categories that describes the presence and extent of sidewalks along that street segment. A street segment is typically bounded by intersections at both ends.

- Both sides: sidewalk is present along both sides of the street segment for its full length
- One side: sidewalk is present along at least one side of the street segment for its entire length
- Incomplete: some sidewalk is present along the street segment, but there are portions missing along both sides of the street.
- None: there is no sidewalk along either side of the street for its entire length

This method is not as precise as the detailed surveys for existing and missing sidewalk that are described in the sections above. However, this method allows an estimation of missing and existing sidewalk miles for all public streets without having to produce a detailed and time-consuming inventory of missing sidewalks for every street.

Estimated sidewalk statistics

Map 3 on page 11 shows all streets by sidewalk status. Tables 5 shows the miles of street that fall into each category.

With this information it is possible to estimate the percentage of existing and missing sidewalks city-wide on all public streets (Table 6). Sidewalks are present along a little under two-thirds (64.1 percent) of Flagstaff’s public street mileage, and are missing along slightly more than one-third (35.9 percent).

The series of tables beginning on the following page shows the estimated percentage of existing and missing sidewalks cross-tabulated against other variables; Table 7 shows sidewalk by the functional class of the street, Table 8 by the agency responsible for the road. Table 9 breaks down sidewalk mileage for various districts or geographic areas within Flagstaff.

Table 5 **Sidewalk status by street centerline**

<i>Sidewalk status</i>	<i>Miles</i>	<i>Percent</i>
Both sides	134.9	54.4
One side	33.3	13.4
Incomplete	14.7	5.9
None	65.1	26.2
Total	247.9	100.0

Table 6 **Estimated sidewalks by street centerline**

<i>Sidewalk status</i>	<i>Miles</i>	<i>Percent</i>
Existing sidewalk	317.7	64.1
Missing sidewalk	178.1	35.9
Total	495.8	100.0

Functional class

Industrial streets have the highest percentage of missing sidewalks at 60.4 percent, followed somewhat distantly by minor arterial streets at 39.4 percent and residential streets at 39.1 percent. Major arterials at 16.5 percent missing and commercial local streets at 17.5 percent have the highest percentage of sidewalk coverage.

Street jurisdiction

City streets (36.4 percent missing) and ADOT roads (35.7 percent) are both missing a little more than a third of their sidewalks. Streets on the NAU campus are missing 15.7 percent of their sidewalks; a far lower ratio than the other two agencies.

Geography/districts

Streets in Flagstaff’s Southeast district, which includes the Country Club neighborhoods, have the highest percentage of missing sidewalks. More than two-thirds (67.3 percent) of the street length in the Southeast district is without sidewalks. This is considerably higher than the next-highest areas; the Southwest district at 44.7 percent and the Northwest at 43.5 percent.

Districts with the lowest percentage of missing sidewalks include West (17.4 percent missing sidewalks), South (19.1 percent missing), and Central South (19.5 percent missing). The NAU campus is located in the Central South district.

Table 9 includes missing sidewalk estimates by district, and Map 4 on page 12 shows the location of the districts.

Table 7 **Estimated sidewalks by street functional class**

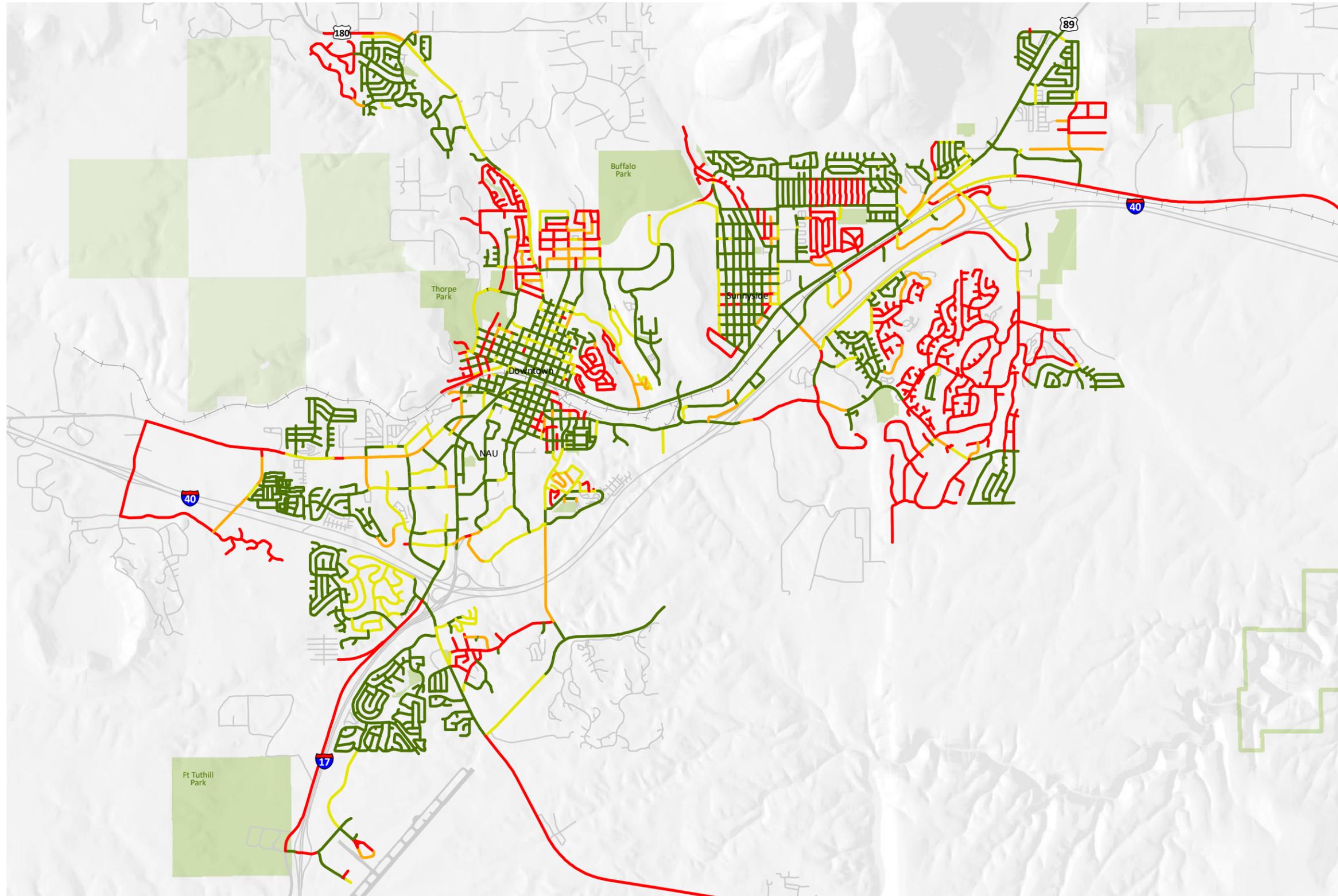
<i>Functional class</i>	<i>Existing miles</i>	<i>Missing miles</i>	<i>Missing percent</i>
Industrial Local	4.9	7.5	60.4
Minor Arterial	33.0	21.5	39.4
Residential Local	164.8	106.0	39.1
Major Collector	36.4	17.2	32.1
Minor Collector	46.9	19.5	29.4
Commercial Local	11.9	2.5	17.5
Major Arterial	19.8	3.9	16.5
Total	317.7	178.1	35.9

Table 8 **Estimated sidewalks by street jurisdiction**

<i>Jurisdiction</i>	<i>Existing miles</i>	<i>Missing miles</i>	<i>Missing percent</i>
City	291.4	166.4	36.4
ADOT	18.4	10.2	35.7
NAU	7.9	1.5	15.7
Total	317.7	178.1	35.9

Table 9 **Estimated sidewalks by district**

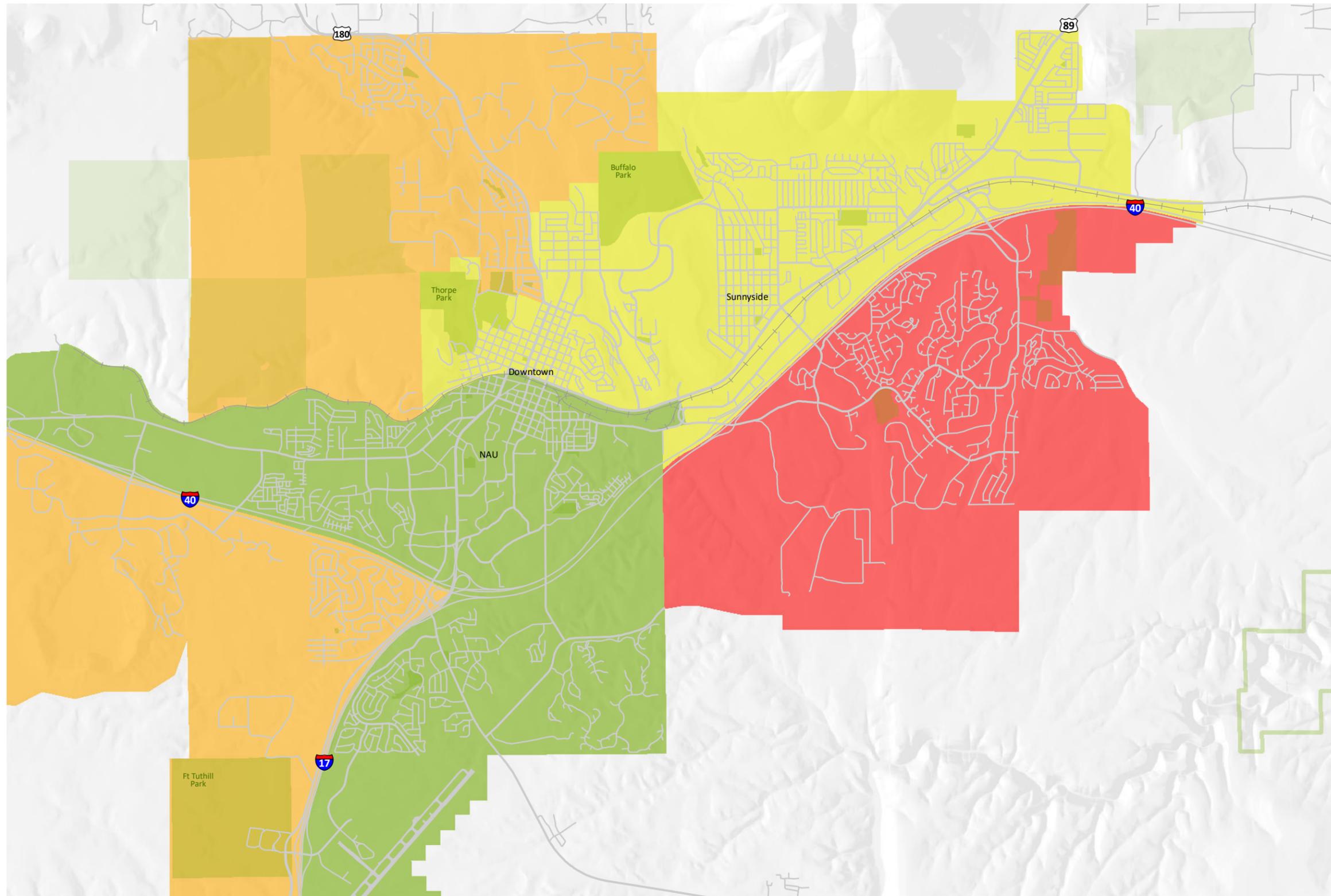
<i>District</i>	<i>Existing miles</i>	<i>Missing miles</i>	<i>Missing percent</i>
Southeast	28.1	57.7	67.3
Southwest	17.6	14.2	44.7
Northwest	23.2	17.9	43.5
Central North	42.3	25.2	37.3
Northeast	27.2	12.6	31.6
East	67.3	24.7	26.9
Central South	39.4	9.6	19.5
South	38.9	9.2	19.1
West	33.8	7.1	17.4
Total	317.7	178.1	35.9



Map 3
Sidewalk presence
by street centerline

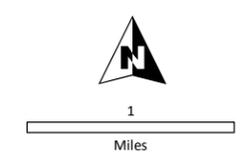
Sidewalk presence
Both sides
One side
Incomplete
None





Map 4
**Missing sidewalks
by district**

Percent missing
20 or less
21 to 40
41 to 60
More than 60



Categorization

Project types

For the purposes of developing a plan for completing missing sidewalks, it is useful to categorize missing segments by “project type,” which essentially describe how missing sidewalks might be completed in the future. There are four major project types:

- **Roadway projects:** includes missing sidewalks adjacent to a street that does not have edge improvements (curb and gutter) and/or has not been built out to its ultimate planned width. Missing sidewalk segments in this category would typically be built as part of a future roadway project that finishes the street, which in turn is either part of a private development project adjacent to the street or a capital project undertaken by the City. This category generally describes longer stretches of unfinished roads with missing sidewalks.
- **FUTS projects:** in some cases, a future FUTS trail is planned along the street to take the place of the sidewalk, and will be constructed through the FUTS capital program. A variation of this situation involves an existing aggregate FUTS trail adjacent to the street; in order to function as a sidewalk, the trail should be paved.
- **Programmed projects:** these are sidewalk projects that are already funded, in design, or under construction as part of another project.
- **Sidewalk projects:** includes missing sidewalk segments that do not fall into any of the above categories, and consequently have no opportunity to be constructed as part of another project. Completion of these missing segments must be planned, funded, and implemented as stand-alone projects. This category can be further divided into two sub-categories:
 - **Major projects** include long, continuous corridors along streets where all or most of the sidewalk is missing. These projects generally exceed 1000 feet in length
 - **Minor projects** represent short gaps, typically less than 1000 feet in length, along streets where much of the sidewalk already exists.

Map 5 on page 15 depicts missing sidewalk by project category, and Table 10 on the next page shows miles of missing sidewalk by project category. Most missing sidewalks fall into either the Sidewalk Project (44.1 percent of missing sidewalks) or Roadway Project (42.8 percent) category. About 4.6 miles of missing sidewalks are planned as future FUTS trails, and 3.3 miles have already been programmed as part of another project.

Table 11 divides sidewalk projects into major or minor subcategories. Most of the missing sidewalk length (87.2 percent, or 23.3 out of 26.7 total miles) falls into the major project category. Only 3.4 miles are considered minor projects. Map 6 on page 16 shows the locations of major and minor sidewalk projects.

Sidewalk projects

All missing sidewalk segments are grouped by location and similarity into “projects,” such that 641 individual segments are combined into 167 total projects. For example, there are five individual missing sidewalk segments along North San Francisco Street between Hunt and DeSilva Avenues. Because all five of these segments are in proximity to each other and have similar characteristics, they have been grouped into a single project named “Sidewalk – San Francisco St 2.”

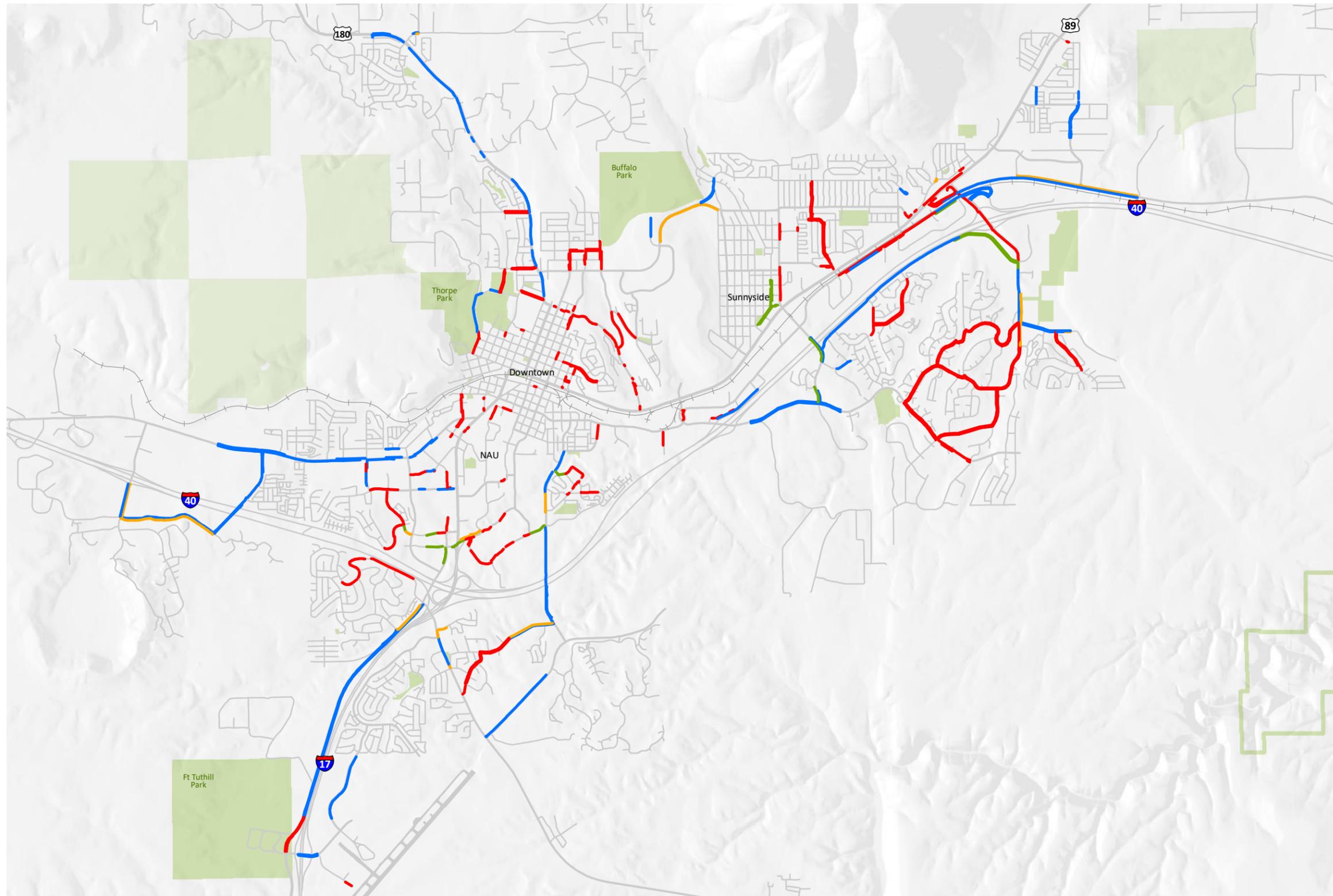
Segments are grouped together into projects not only based on proximity, but also because they share the same category and subcategory. For example, there are several missing sidewalk projects along West Route 66 between Woodlands Village Boulevard and Woody Mountain Road. All are in the Roadway category, but they are divided by subcategories of “Capital” or “Development” based on whether future private development or a future capital project will complete the street and add the missing sidewalks.

Table 10 **Missing sidewalks by project category**

<i>Category</i>	<i>Miles</i>	<i>Percent</i>
Sidewalk project	26.6	44.1
Roadway project	25.9	42.8
FUTS project	4.6	7.6
Planned project	3.3	5.5
Total	60.4	100.0

Table 11 **Major and minor sidewalk projects**

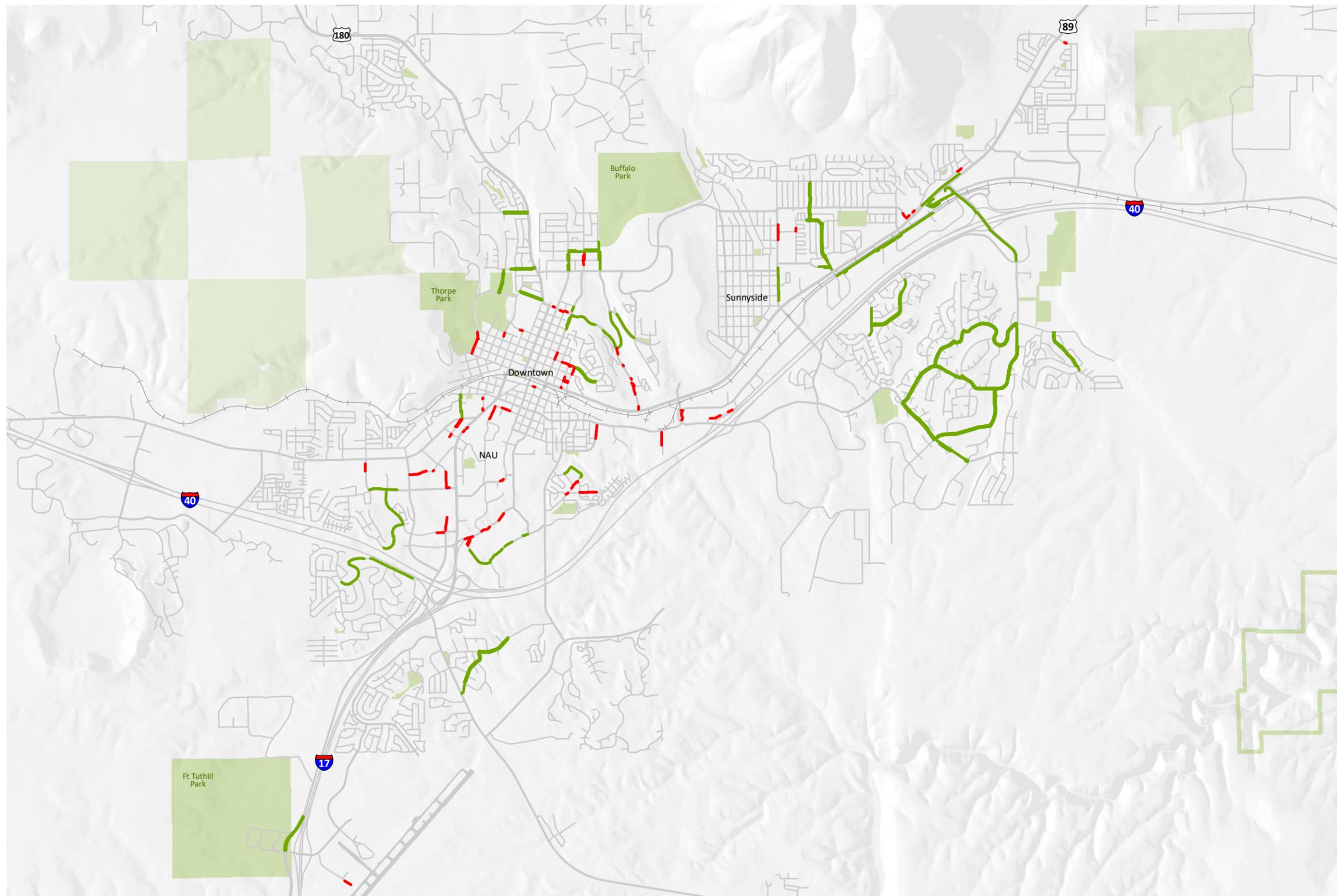
<i>Category</i>	<i>Miles</i>	<i>Percent</i>
Major	23.2	87.3
Minor	3.4	12.7
Total	26.6	100.0



Map 5
**Missing sidewalks
by project type**

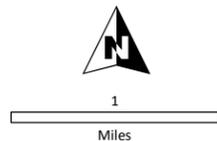
- Project type**
-  FUTS project
 -  Programmed project
 -  Roadway project
 -  Sidewalk project





Map 6
Major and minor sidewalk projects

Subcategory
Major
Minor



Sidewalk prioritization

Prioritization measures and factors

This section describes a methodology for establishing priorities among missing sidewalk segments. The methodology is intended to identify locations where sidewalk are most needed and will be most used. Priority scoring is based on a combination of three measures, which are in turn comprised of a number of measures. A detailed description of the three measures and associated factors is found in Appendix A.

Pedestrian generators and attractors

Pedestrian attractors and generators describe places that people are more likely to walk to or from. Factors for this measure include:

- Schools
- Parks
- Commercial areas
- Employment centers
- Transit stops
- Population centers
- Grade separations
- Institutions
- NAU campus

Higher scores for this measure indicate higher concentrations of places that attract and generate walking trips, and therefore a greater need for sidewalks.

Social factors for walking

Social factors for walking are circumstances that make people more likely to walk. Individual factors include:

- Elderly populations
- Human service facilities
- Persons with disabilities
- Low income neighborhoods
- Affordable housing
- Children under the age of 18
- Young adults between the ages of 18 and 24
- Households that do not have a vehicle available

Higher scores for social factors indicate that more people in these areas have to walk to get places.

Pedestrian environment score

Pedestrian environment factors are the physical conditions that make walking more comfortable or more difficult. Environmental factors include:

- The presence of sidewalks
- Buffers for pedestrians from the street and traffic
- Traffic speed and volume
- The number of lanes in the street
- The presence of a median
- The function of the street (functional class)

There is a greater need to have continuous sidewalks in areas where the environment is otherwise difficult or uncomfortable for pedestrians.

Priority scoring

A total priority score is derived for each missing sidewalk using the following methodology.

First, individual factors are evaluated based on a score, scale, and weight:

- **Score:** each factor is scored from 0 to 3, based on a specific measure for the factor such as proximity, density, size, or population
- **Scale:** accounts for differences in size or intensity within factors. For example, schools are scaled according to enrollment while transit stops are scaled according ridership.
- **Weight:** reflects the relative importance of the factor compared to one another. Weighting factors were derived by the City’s Pedestrian Advisory Committee using a constant sum/paired comparison exercise.

<i>Measure</i>	<i>Weight</i>
Pedestrian environment	1.28
Attractors and generators	1.21
Social factors	1.00

More detail on the scores, scales, and weights for each factor are presented in Tables 22, 23, and 24 in Appendix A.

Second, all of the factors for each measure are combined to generate heatmaps for each of the three measures. Heatmaps are depicted on Maps 9, 10, and 11 in Appendix A.

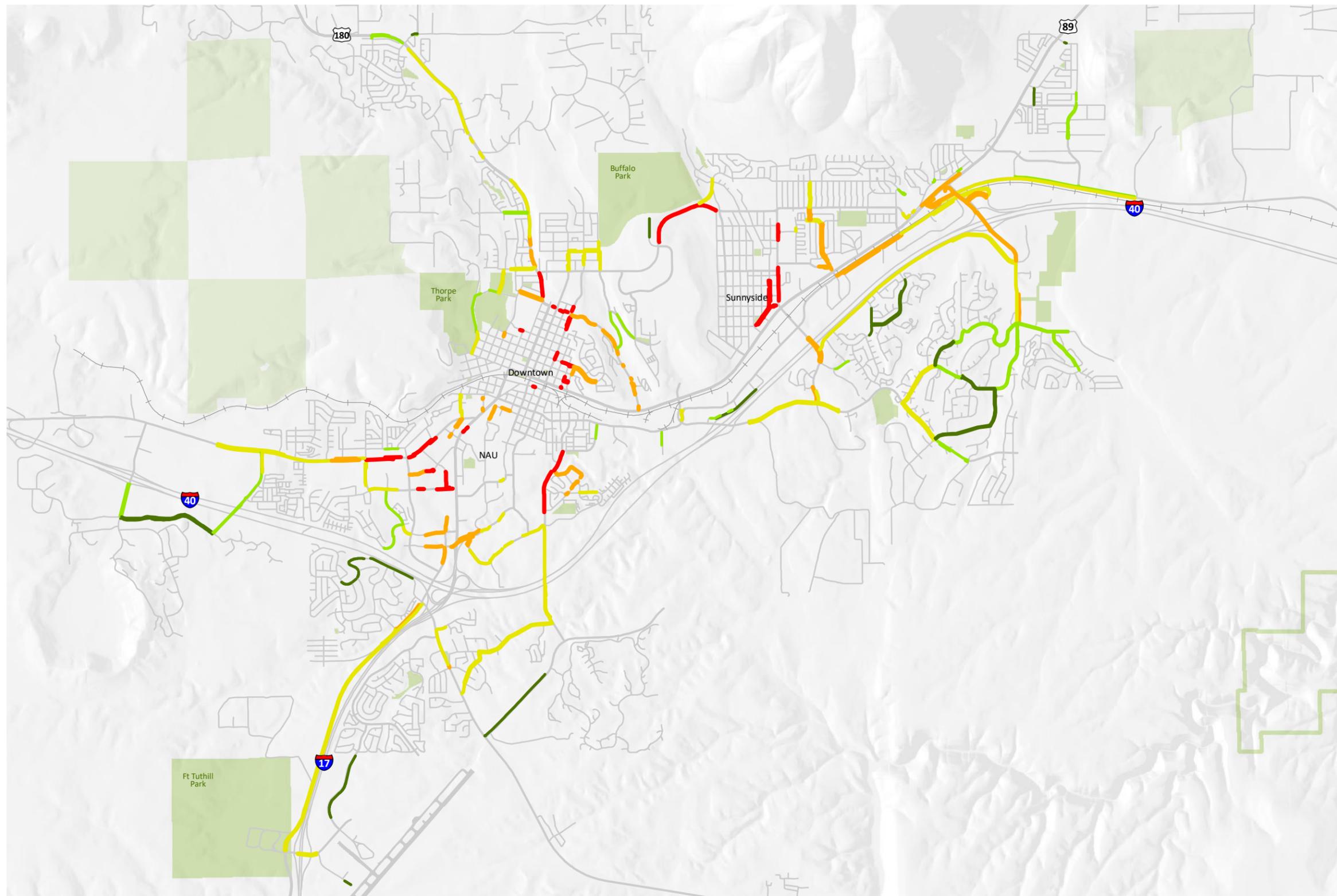
Third, a score for each missing sidewalk segment is determined based on its location on the heatmap for given a score based on its location.

Lastly, the three scores for each are combined and weighted into a total priority score. Weighting factors for the three measures were also determined by the

City's Pedestrian Advisory Committee using a constant sum/paired comparison exercise, and are presented in Table 12

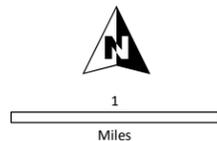
Scores for missing sidewalk projects range from a high of about 255 to a low of just under 84. Higher scores are indicative of areas where more walking activity is anticipated, where residents have a greater need to walk to get places, and/or where the existing pedestrian environment is poor. As a result, completing missing sidewalks in these areas should be prioritized.

Map 7 (page 22) illustrates all 167 sidewalk projects by priority score.



Map 7
All missing sidewalk projects by priority score

Priority
High
Medium
Low



Project recommendations

Other factors

The priority score evaluation from the previous section gives good indication of which missing sidewalks are most-needed and would be used based generally on its location. This provides a good starting point for developing a list of recommended sidewalk projects.

The final step in the prioritization process includes review of individual projects to consider items that may not have been accounted in the prioritization process described in the previous section.

Factors considered in this review include:

- The character of land uses in the vicinity that would be served by the sidewalk project. Commercial and mixed use development, higher density land uses, and the presence of nearby schools and transit stops all indicate an existing or more immediate need for completion of the sidewalk
- Local, anecdotal knowledge regarding pedestrian activity in the area and the immediate need for and urgency of the project.
- Constructability and technical issues that may make the project more difficult or costly to construct. Examples of technical issues may include floodplain and other drainage issues, significant topography and grading, encroachment of private improvements or landscaping into the right-of-way, and lack of right-of-way.
- The presence of other, existing pedestrian facilities that could serve in the interim as a reasonable alternative. For example, a street that has sidewalk on one side and is easy to cross may reduce the immediate need to construct the missing sidewalk on the other side.
- The results of citizen walking and biking surveys, in particular the walking and biking survey of 2014 and the pedestrian and bicycle project survey.
- Any other factors that may affect the immediate need or urgency for installing the missing sidewalk.

Recommendations

Based on the priority score and consideration of the additional factors described above, all individual sidewalk projects are recommended for completion in the short, medium, or long terms. A sidewalk may also be recommended as a deferred project if it will be part of another project, or forwarded to NAU if it is

located on campus. All of these recommendation categories are outlined below.

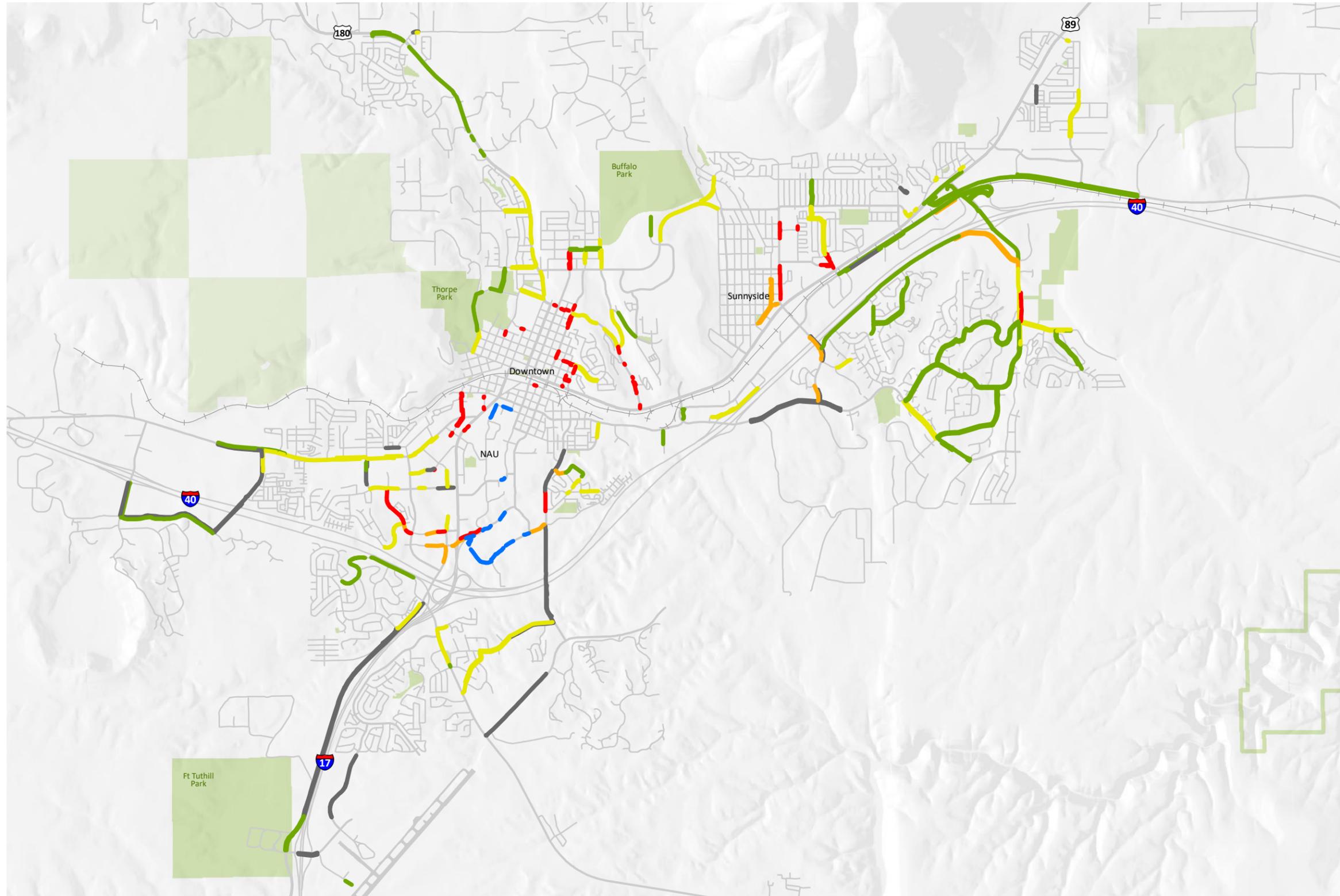
- Short term projects: this list includes projects for which there is an existing or immediate need, and are recommended for completion within the next five years.
- Medium term projects: these projects are also important, but there is less of an immediate need and the project may have constructability concerns. Projects in this category are recommended for construction in the 5 to 10 year time frame.
- Long term projects: these projects have no urgency or need in the immediate or medium term, and could be considered in a time-frame that extends beyond 10 years.
- NAU projects: includes missing sidewalk projects located within the NAU campus on streets operated by NAU. Because the City has no jurisdiction to build sidewalks on campus, these projects have been pulled out of the recommended lists of short, medium, and long term projects.
- Deferred projects: projects that are recommended as deferred are not urgent or needed immediately, and will be added eventually as part of a future private development or City capital project. Construction of the missing sidewalk can be deferred until the adjoining street is completed with the project.

Table 13 Estimated cost for recommended sidewalk projects

<i>Recommendation</i>	<i>Projects</i>	<i>Miles</i>	<i>Est cost</i>
Short term	28	3.3	\$ 2.3 m
Medium term	54	15.0	\$ 9.9 m
Long term	45	24.7	\$ 14.8 m
NAU projects	7	1.0	\$ 0.4 m
Deferred projects	24	12.9	\$ 10.1 m
Programmed projects	9	3.3	\$ 0.0 m
Total	167	60.4	\$ 37.5 m

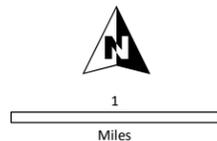
A summary of recommended sidewalk projects in each category is provided in Table 13. A map of all projects by recommendation is included as Map 8 on page 23.

Appendix B includes lists and maps for of all sidewalk projects organized by recommendation. Additional discussion of sidewalk projects in each of the recommended categories is also provided in the section below.



Map 8
**Recommended
sidewalk projects**

- Recommendation**
-  Short
 -  Medium
 -  Long
 -  NAU
 -  Deferred
 -  Programmed



Recommended projects discussion

Short term projects

A total of 28 missing sidewalk projects are included on the short term list and are summarized in Table 14. A complete list of short-term sidewalk projects is found in Appendix B in Table 25 and on Map 12.

In total the short term projects are estimated to cost \$2.3 million, and would complete about 3.3 miles of missing sidewalks in the community. Most of the recommended short term projects (18 in all) are categorized as minor sidewalk projects, which are generally under 1000 feet in length and are located along streets where much of the sidewalk is already in place. Minor sidewalk projects on the short term list comprise about 1.2 miles of missing sidewalks and would cost about \$600,000 to complete.

Table 14 **Estimated cost for short term sidewalk projects**

<i>Category</i>	<i>Projects</i>	<i>Miles</i>	<i>Est cost</i>
Sidewalk - major	6	1.5	\$ 0.8 m
Sidewalk - minor	18	1.2	\$ 0.6 m
FUTS - construct	3	0.5	\$ 0.6 m
FUTS - pave	1	0.2	\$ 0.2 m
Total	28	3.3	\$ 2.3 m

There are also a total of six major sidewalk projects included in the short-term recommendations. Major sidewalk projects are defined as long, continuous corridors where all or most of the sidewalk is missing. Major sidewalk projects on the short term list represent 1.5 miles of missing sidewalk and would cost about \$800,000 to complete. The six projects are listed below.

- Beaver Street: from Forest Ave to Cedar Ave
- Blackbird Roost: from Route 66 to Clay Ave
- Forest Meadows Street: from Highland Mesa Dr to University Ave
- Fourth Street: from Route 66 to Seventh Ave
- San Francisco Street: from Hunt Ave to DeSilva Ave
- Steves Blvd/Lakin Dr: from Route 66 to Lewis Dr

Missing sidewalk along the east side of Fourth Street from Seventh Ave to Lockett Rd are included as a minor sidewalk project.

Four FUTS trail projects, which would take the place of sidewalks along a street, are also recommended in the short term. Three of these projects – Country Club Trail, Lone Tree Trail, and Southwest Crossing Trail – are new construction. A fourth, the Sinclair Wash Trail – would convert an existing aggregate-surfaced trail to concrete.

Medium term projects

Projects recommended in the medium term are summarized in Table 15. A complete list of medium term projects is provided on Table 26 and Map 13 in Appendix B.

A total of 45 missing sidewalks are identified as medium-term projects, totaling 15.0 miles in length and estimated at \$9.9 million to compete. Fifteen projects on the medium term list are major sidewalk projects, 14 are minor sidewalk projects, and seven are FUTS trail projects.

The list also includes eight projects that are categorized as roadway projects. Roadway projects typically describe streets that are not finished in that they have not been built to their ultimate width, or they are lacking curb and gutter along the edges. In most cases, the missing sidewalks would be built when the street is finished, either in conjunction with private development adjacent to the street, or as part of a city capital improvement project.

For the eight roadway projects included on the medium term list, it is recommended that a sidewalk project proceed in advance of a roadway development or capital project. These projects are recommended for the medium term typically because there is some current need for the sidewalk, but uncertainty as to when the roadway project will move forward. The eight recommended roadway projects include:

- Country Club Drive: between Soliere Ave and Oakmont Dr
- Dodge Ave: between Penstock Ave and Allen Ave
- Lake Mary Road: between High Country Tr and Cochise Dr
- Linda Vista Drive: between Paradise Rd and Cedar Ave
- Lucky Lane: between Butler Ave and Bronco Way
- Old Walnut Canyon Road: between Country Club Dr and Walnut Hills Dr
- Sparrow Avenue: between Mustang Way and Falcon Rd
- University Avenue: between Yale St and Woodlands Village Blvd

<i>Category</i>	<i>Projects</i>	<i>Miles</i>	<i>Est cost</i>
Sidewalk - major	15	6.1	\$ 3.0 m
Sidewalk - minor	13	1.3	\$ 0.7 m
FUTS - construct	4	0.4	\$ 0.5 m
FUTS - pave	3	1.3	\$ 1.6 m
Roadway - capital	10	4.0	\$ 2.5 m
Roadway - development	9	1.9	\$ 1.6 m
Total	54	15.0	\$ 9.9 m

Long term projects

There are a total of 45 projects recommended in the long term, representing 24.7 miles of sidewalk projects and costing an estimated \$14.8 million.

Most of the long-term projects (26 of 45) are major sidewalk projects. Only a few are minor sidewalk projects or FUTS trail projects. Long term projects are summarized in Table 16, and listed individually on Table 27 and Map 14 in Appendix B.

Table 16 **Estimated cost for long term sidewalk projects**

Category	Projects	Miles	Est cost
Sidewalk - major	26	15.2	\$ 7.0 m
Sidewalk - minor	4	0.3	\$ 0.1 m
FUTS - construct	4	1.4	\$ 1.7 m
FUTS - pave	1	0.8	\$ 1.0 m
Roadway - capital	8	6.1	\$ 4.1 m
Roadway - development	2	0.9	\$ 0.7 m
Total	45	24.7	\$ 14.8 m

NAU projects

Missing sidewalks on the NAU campus are organized into seven projects, totaling about a mile in length and costing a little more than \$400,000. Significant projects include scattered sections of missing sidewalk along Pine Knoll Drive through south campus, missing sidewalks at the intersection of Pine Knoll Drive and McConnell Drive, and missing segments along Knoles Drive and DuPont Avenue on north campus.

A complete list of missing sidewalk projects on the NAU campus is included in Table 28 and Map 15 in Appendix B. Only sidewalks along campus streets are included in this list.

Deferred projects

A total of 24 missing sidewalk projects are recommended as deferred projects, which means that completion of the sidewalk can be deferred until private development or a future City capital project completes construction of the street. All of the projects recommended for deferral are roadway projects; none of the deferred projects are classified as sidewalk or FUTS projects. In total, the deferred list includes 12.9 miles of missing sidewalk with an estimated construction value of \$10.8 million.

Projects that recommended for deferral are listed in Table 29 and illustrated on Map 16 in Appendix B.

Programmed projects

Nine missing sidewalk projects are already included as part of another private or City project that is funded, in design, or under construction. Four of these

projects are sidewalk or street projects, three are being installed in conjunction with private development, and two are planned FUTS projects. Since these projects are already funded, cost estimates have not been prepared. Table 30 and Map 17 in Appendix B depict planned sidewalk projects. The nine programmed projects are described below:

- Sunnyside sidewalk projects: one of the last phases of the Sunnyside sidewalk project will build sidewalks along Spruce and Third Avenue, between First St and Fifth Ave (project 24).
- McConnell Drive: ADOT is planning to build a sidewalk along the south side of McConnell Drive underneath the I-17 bridge as part of a bridge rehab project (project 17).
- Brannen Circle: City project to add sidewalks to the north side of Brannen Circle between Lone Tree Road and Calle Reposa (project 18).
- Industrial Drive: City project to complete a missing segment of sidewalk on the south side of Industrial Drive between Eagle Mountain Drive and Huntington Drive.
- Loft development: this private student housing project will building missing segments on Forest Meadows Street, McConnell Drive, and Beulah Boulevard as part of their required off-site improvements (Project 25).
- Country Club/I-40 development: new commercial development will realign Soliere Drive and add sidewalks to both sides of the section west of Country Club Drive.
- Mountain Trails development: residential project will add a short section of sidewalk along Forest Meadows Street south of Highland Mesa drive (project 23).
- Fourth Street FUTS: grant funded projects to complete missing segments of the FUTS along the west side of Fourth Street between Huntington Drive and Butler Avenue (project 20).
- Pine Knoll FUTS: grant-funded project to add a segment of FUTS along the north side of Pine Knoll Drive between Lone Tree Road and San Francisco Street (project 21)

A few roadway and development projects are in the planning phase, but do not have committed funding or are far enough along to be considered as programmed projects. At some point in the future these projects may be considered programmed projects.

- Lone Tree Road – between Sawmill Rd to Woodland Dr: included in the potential widening of Lone Tree Rd.
- Butler Avenue – between Little America and Sinagua Heights: included in the planned widening of Butler Ave.
- Fourth Street – between Huntington Dr and Sparrow Ave: included in the potential widening of Fourth St.
- University Avenue – west of Milton Rd: included in the planned extension of Beulah Blvd and realignment of University Ave.

Constructability considerations

Installation of new sidewalks may be affected by a variety of constructability issues. Recurring considerations for construction are described below, and specific constructability issues for individual recommended short term projects are noted in Appendix C.

- All new sidewalks should be built to City standards, which includes a parkway buffer between the sidewalk and street. Parkway buffers are a very important component of the pedestrian environment. They form a buffer for pedestrians from traffic, provide a place for trash bins, construction signs, mailboxes, and other appurtenances, keep cinders and plowed snow off the sidewalk, and allow for street trees and other landscape enhancements to soften the streetscape. All sidewalks should only be installed with a parkway.
- Additional right-of-way may be necessary to allow for the addition of sidewalks. Known or obvious right-of-way issues are called out in Appendix C. Otherwise, no attempt has been made as a part of this analysis to determine if additional right-of-way would be needed, and acquisition costs are not included in cost estimates.
- In some cases, there may be private landscaping, walls, fences, steps, and other objects within the right-of-way where the sidewalk would be located, particularly in residential areas. Working with property owners in advance and finding ways to mitigate impacts to existing landscaping and features may help avoid potential conflicts.
- Along some commercial streets, private parking lots may extend up the curb at the edge of the street. In these cases, a buffer should be provided between interior parking and the sidewalk to create a better pedestrian environment and to keep vehicles from encroaching into the sidewalk.
- Where a new sidewalk crosses an existing driveway, the driveway should be reconstructed to meet current City standards and ADA guidelines. Exces-

sively wide driveways should be narrowed to current standards. The cost of reconstructing driveways has been accounted for in the cost estimates.

- Parking spaces adjacent to the street may have to be removed or reconfigured in some cases to avoid conflicts with a new sidewalk, parkway, and buffer. In some cases, there may be an opportunity to reconfigure parking areas on the adjoining private parking lot to avoid loss of spaces. Where there is not curb-and-gutter adjacent to the street, there may be informal parking areas along the street that would be removed when a sidewalk is added.

Cost estimates

Cost estimate methodology

Preliminary cost estimates have been prepared for all missing sidewalk segments and projects, with the exception of sidewalk projects that are already programmed and budgeted, and are described and summarized in this section.

Cost estimates are based on the following considerations:

- Unit costs were taken from four contractor bids for the Sunnyside Phase VC sidewalk project, which were opened on March 28, 2016.
- The square footage (area) of new sidewalk is based on the required minimum width of the sidewalks per the City's Engineering Standards - 6 feet for arterials, 5 feet for collectors and local streets, and 10 feet for FUTS trails – multiplied by the linear feet.
- Concrete depth is 4 inches for standard sidewalks and 6 inches for FUTS trails. Concrete costs for this thickness is \$8 for per square foot for sidewalks and \$12 per square foot for FUTS trails.
- For sidewalk projects, actual locations and numbers for new curb ramps and replacement driveway pans were determined for each segment. For FUTS and roadway projects, the number of curb ramps and driveway pans were estimated based on averages per 1000 feet for sidewalk projects. The cost of a curb ramp is estimated at \$2100, and the cost of a driveway pan is \$2250.
- Where curb and gutter is not present along the street, a cost of \$24 per linear foot for new curb and gutter is included in the estimated cost.
- The cost of constructing new FUTS trails is determined by using the cost-estimating spreadsheet used as part of the FUTS capital program.
- Given the very general nature of these estimates, a 25 percent contingency is included for all projects to cover additional construction items like rock excavation, retaining walls, and drainage features that are difficult to anticipate in advance without reviewing the constructability of each project individually.
- Design and construction administration fees are calculated at 20 percent of construction costs and are included in the total cost estimate.

Summary of costs

Total cost to complete all missing sidewalks along major streets in Flagstaff is a little more than \$37.5 million (Table 17).

Of this total, sidewalk projects account for \$12.8 million, future roadway projects total \$19.1 million, and future FUTS projects are \$5.6 million.

A breakdown of costs by roadway jurisdiction (Table 18) reveals that City streets account for \$32.5 million in estimated missing sidewalk costs. ADOT roads are missing about \$4.6 million in sidewalks, and NAU needs a little more than \$350,000 to complete missing sidewalks along campus streets.

Sidewalk projects

Sidewalk projects, which include all the missing sidewalk segments which have no possibility for completion as part of another project, are estimated at \$12.8 million. This amount includes major sidewalk projects at \$11.0 million and minor segments totalling \$1.8 million (Table 19).

FUTS projects

Where FUTS trails are planned along streets with no sidewalks, and will serve in place of the public sidewalk, the cost of construction is estimated at \$2.8 million for 2.2 new miles of trail (Table 20). Where there is an existing aggregate FUTS trails, but no sidewalk adjacent to the street, the cost of paving those trails with concrete would be about \$2.9 million in total and would convert 2.4 miles of

Table 17 **Estimated cost to complete missing sidewalks**

Category	Projects	Miles	Est cost
Roadway projects	53	25.9	\$ 19.1 m
Sidewalk projects	89	26.6	\$ 12.8 m
FUTS projects	16	4.6	\$ 5.6 m
Programmed projects	9	3.3	\$ 0.0 m
Total	167	60.4	\$ 37.5 m

Table 18 **Estimated cost to complete sidewalks by jurisdiction**

Jurisdiction	Projects	Miles	Est cost
City of Flagstaff	142	53.4	\$ 32.5 m
ADOT	18	5.9	\$ 4.6 m
NAU	7	1.0	\$ 0.4 m
Total	167	60.4	\$ 37.5 m

Table 19 **Estimated cost to complete major and minor sidewalk projects**

Subcategory	Projects	Miles	Est cost
Major projects	48	23.3	\$ 11.0 m
Minor projects	41	3.4	\$ 1.8 m
Total	89	26.6	\$ 12.8 m

Table 20 **Estimated cost to complete sidewalks for FUTS projects**

Subcategory	Projects	Miles	Est cost
Construct new FUTS	11	2.2	\$ 2.8 m
Pave existing agg FUTS	5	2.4	\$ 2.9 m
Total	16	4.6	\$ 5.6 m

Table 21 **Estimated cost to complete sidewalks for roadway projects**

Subcategory	Projects	Miles	Est cost
Capital projects	30	18.2	\$ 12.2 m
Private development	23	7.6	\$ 6.9 m
Total	53	25.9	\$ 19.1 m

existing trail. Paving these trails would provide an all-weather surface and allow year-round use.

Roadway projects

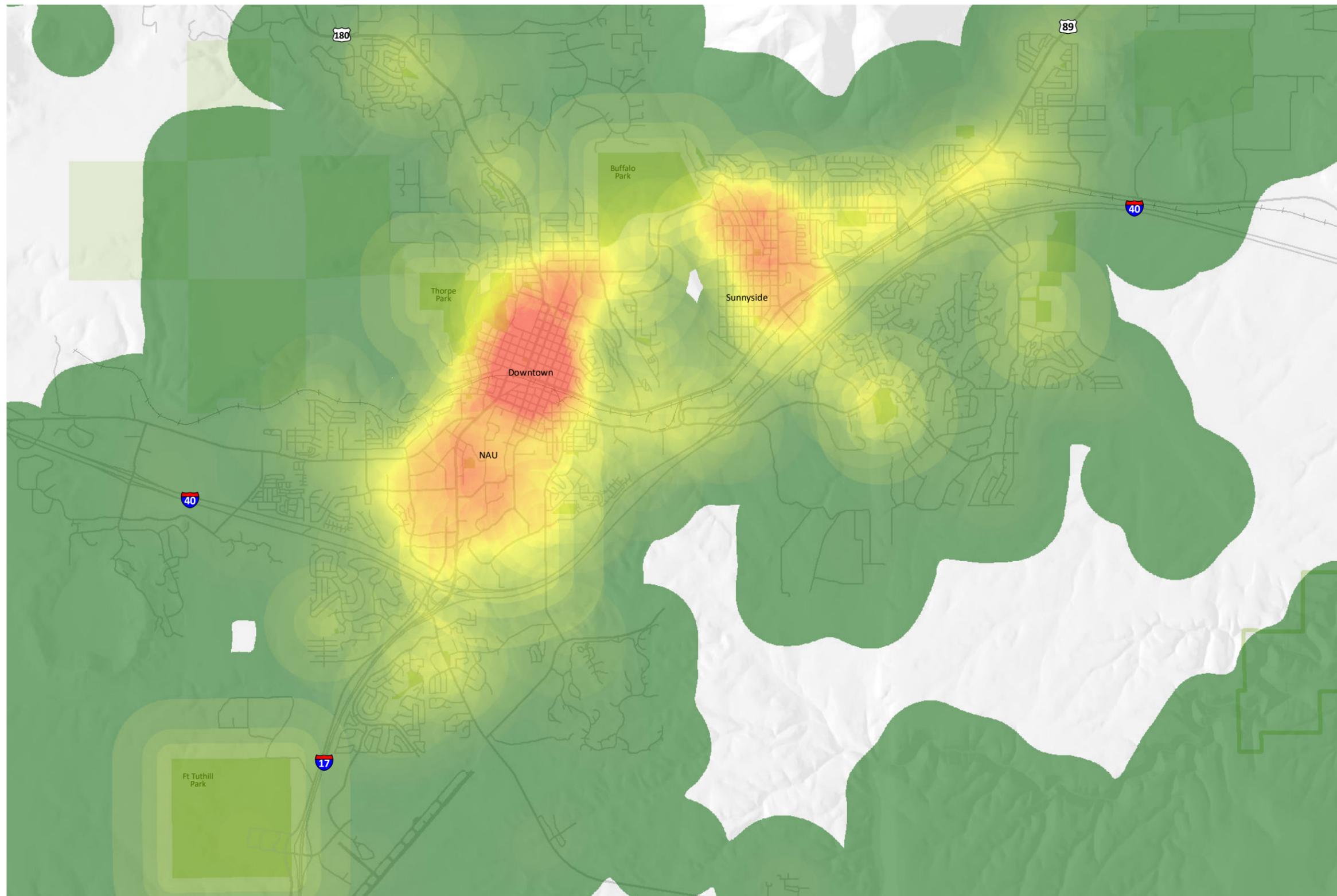
For sidewalks that are part of future roadway projects, about 7.6 miles of sidewalk worth \$6.9 million would be built in conjunction with private development, and another 18.2 miles worth \$12.2 million would be provided through City capital roadway projects (Table 21).

Appendix A: Prioritization measures and factors

Table 22 **Pedestrian attractors and generators**

<i>Factor</i>	<i>Description</i>	<i>Score</i>	<i>Scale</i>	<i>Weight</i>
Schools	Schools can be significant pedestrian generators when children are encouraged to walk to school. All school locations, including public, private and charter schools, are part of the analysis.	Proximity: 3 Eighth mile 2 Quarter mile 1 Half mile	Enrollment: 1.00 1000+ 0.75 450 - 999 0.50 150 - 449 0.25 Less than 150	2.27
Parks	Parks are often popular destinations for walking trips. This factor measures proximity to public parks, and scales the score based on park function such that larger, community parks are greater pedestrian attractors than smaller, neighborhood or pocket parks.	Proximity: 3 Eighth mile 2 Quarter mile 1 Half mile	Park function: 1.00 Community 0.50 Neighborhood 0.25 Pocket	1.81
Commercial areas	Retail and commercial centers promote walking, and higher densities or concentrations of commercial activity attract more pedestrian activity. This factor is scored on the size and density of commercial buildings.	Building size/density: 3 Largest/densest 0 None	--	1.80
Employment	Employment centers can generate walking trips, especially larger and more concentrated areas. Information for this factor is taken from employment and land use data in the FMPO's regional traffic model.	Employees: 3 Most/densest 0 None	--	1.78
Transit stops	Many transit patrons walk to and from bus stops. This factor measures proximity to transit stops, and scales the scoring based on the number of transit riders who use the stop (boarding and alightings).	Proximity: 3 Eighth mile 2 Quarter mile 1 Half mile	Ridership 1.00 100+ b/a 0.75 50-99 b/a 0.50 20-49 b/a 0.25 Less than 20	1.47
Population	Higher-density residential neighborhoods tend to generate more walking trips than lower-density neighborhoods. This measure is based on the density of dwelling units.	Dwelling units: 3 Most/densest 0 None	--	1.44
Grade separations	Grade separations (bridges, tunnels, overpasses, and underpasses) attract pedestrian activity because they provide a way to cross interstates, railroads, and major streets.	Proximity: 3 Eighth mile 2 Quarter mile 1 Half mile	--	1.15

Institutions	Institutional uses like government offices, museums, and libraries attract pedestrian activity. The score for this factor is derived from proximity to institutions.	Proximity: 3 Eighth mile 2 Quarter mile 1 Half mile	--	1.00
NAU	The NAU campus can be a significant pedestrian generator, given the volume of trips made to and from campus, its location in the center of Flagstaff, and parking limitations on campus.	Proximity: 3 Eighth mile 2 Quarter mile 1 Half mile	--	1.00



Map 9
**Pedestrian generators
and attractors**

Attractors/generators
High
Low

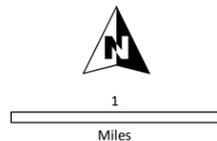
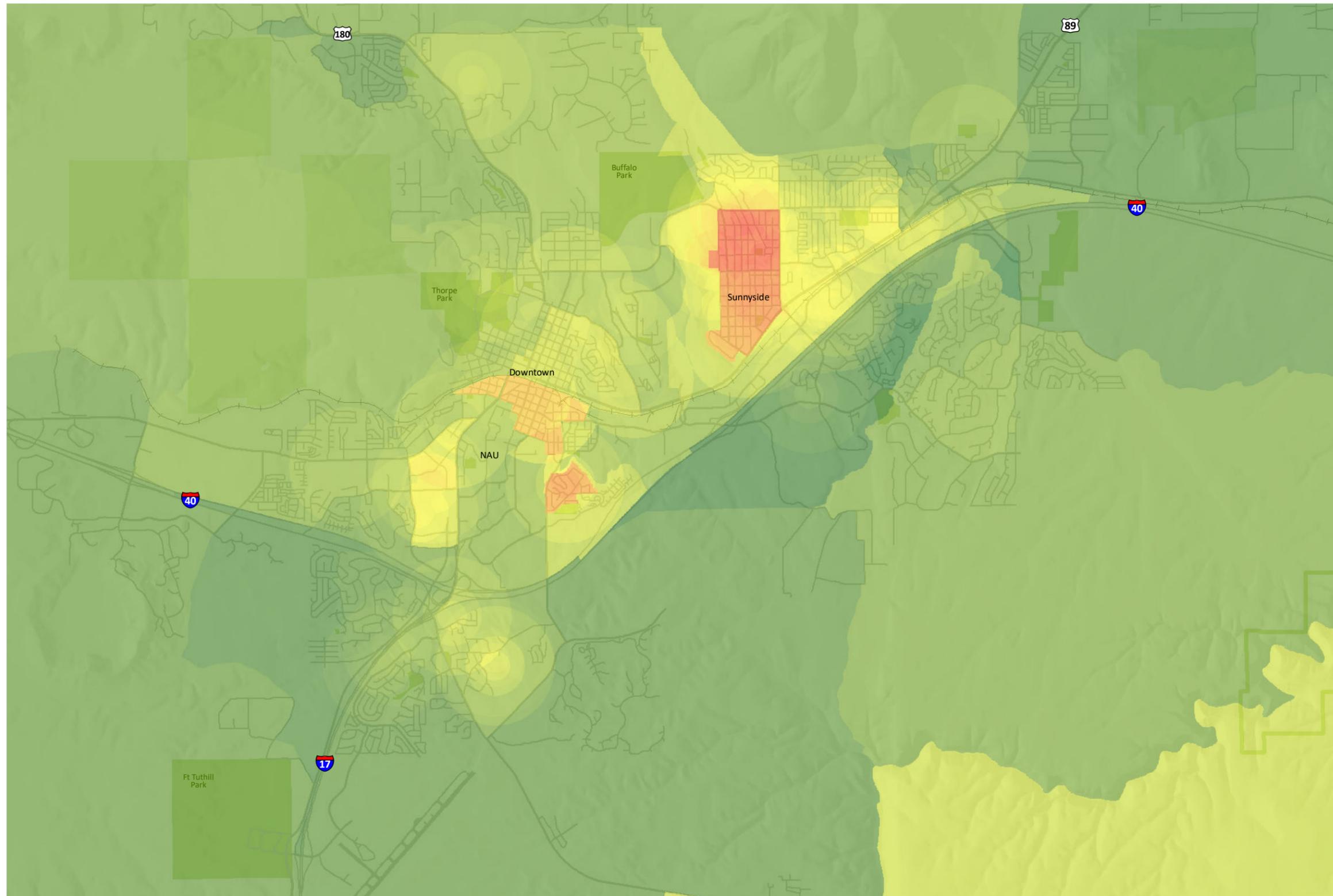


Table 23 **Social factors for walking**

<i>Factor</i>	<i>Description</i>	<i>Score</i>	<i>Scale</i>	<i>Weight</i>
Elderly	Older adults are less likely to drive and would benefit from comfortable pedestrian facilities. This factor is measured for each census block group as the percentage of the population aged 65 and older.	Percent of population 3 Highest 0 None	--	1.15
Human service facilities	Enhanced pedestrian facilities in the vicinity of these services benefit their clients. Human services for this analysis include a variety of facilities, such as medical centers, charitable organizations, and state service offices.	Proximity 3 Eighth mile 2 Quarter mile 1 Half mile	--	1.13
Persons with disabilities	This segment of the population often has mobility limitations that could be improved with better pedestrian facilities and access to transit. This factor is measured for each census tract as the percentage of the population with a disability.	Percent of population 3 Highest 0 None	--	1.11
Low income areas	Residents are less able to afford a vehicle, and mobility would be enhanced by a more complete walking network and better access to transit. Includes Flagstaff's four federally-designated low income neighborhoods: Sunnyside, La Plaza Vieja, Southside, and Brannen.	Designation 3 Low income 0 Not low income	--	1.10
Affordable housing	Sidewalks help to improve mobility and reduce transportation costs for residents. This factor documents locations for tax credit apartment projects and Flagstaff Housing Authority sites.	Proximity 3 Eighth mile 2 Quarter mile 1 Half mile	Residential units: 1.0 Most 0.0 None	1.08
Children	Sidewalks encourage physical activity, support walking to school, and provide a safe place for walking for children. Measured by census block groups as the percentage of the population that is under the age of 18.	Percent of population 3 Highest 0 None	--	1.04

Young adults	Sidewalks will enhance mobility for individuals in this age range, who are increasingly less likely to possess a drivers license and are more likely to choose walking for transportation. Measured by census block group as the percentage of the population between the age of 18 and 24.	Percent of population -- 3 Highest 0 None	1.04
No vehicles	Improves mobility for households and families that do not have a vehicle. Measured by census block group as the percentage of households that do not have access to a vehicle.	Percent of households -- 3 Highest 0 None	1.00



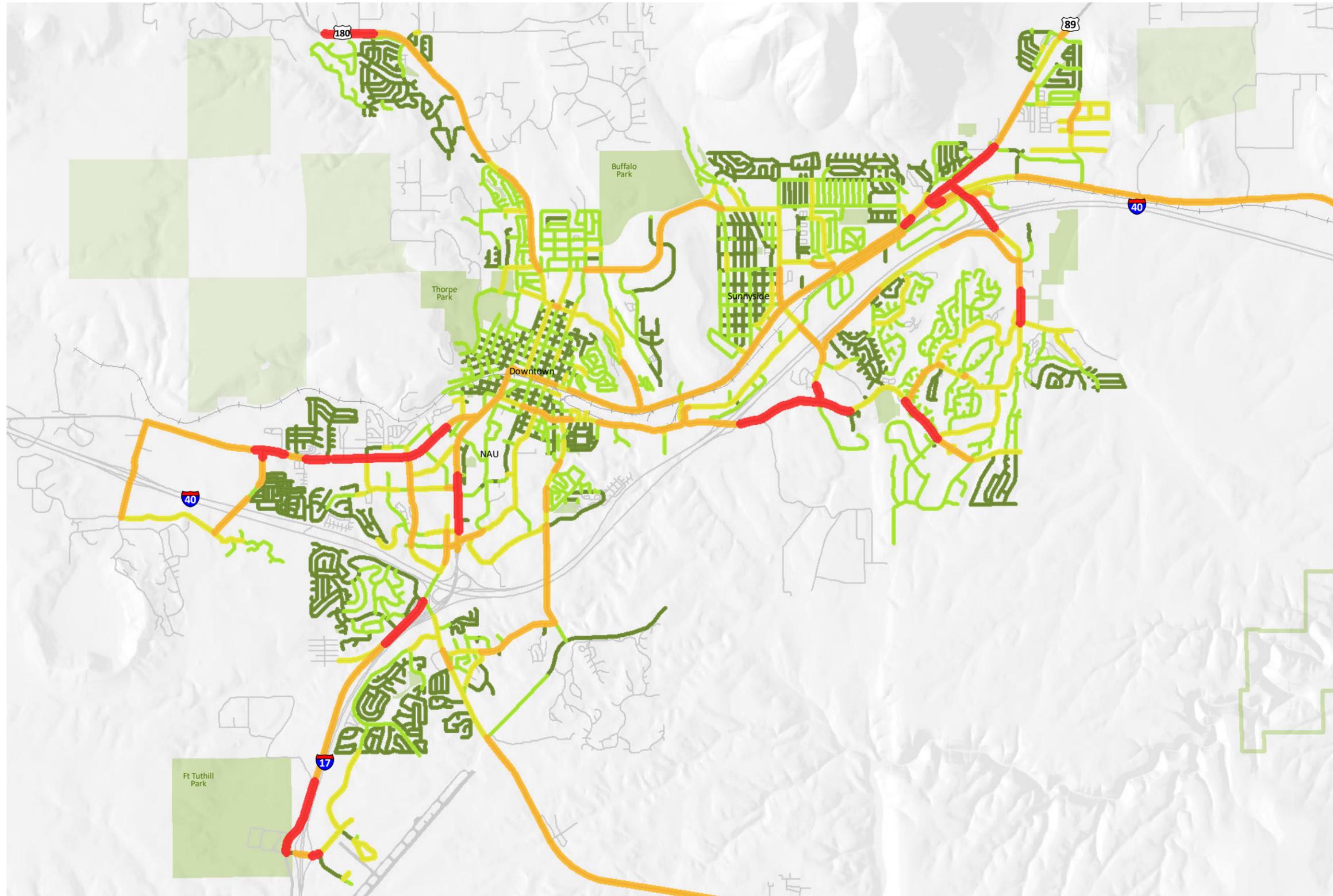
Map 10
Social factors
for walking

Social factors
High
Low



Table 24 **Pedestrian environment factors**

<i>Factor</i>	<i>Description</i>	<i>Score</i>	<i>Scale</i>	<i>Weight</i>
Sidewalks	Sidewalks provide a safe and comfortable place for people to walk and are the fundamental facility for walking. Each street segment is scored based on the presence and extent of sidewalks along the street segment.	0 None 1 Partial 2 One side 3 Both sides	--	1.50
Pedestrian buffers	Parkway strips, on-street parking, and bike lanes all provide a physical buffer between pedestrians and roadway traffic. The presence of one or more of these buffers adds to pedestrian comfort.	0 No buffers 1 One buffer 2 Two buffers 3 Three buffers	--	1.32
Traffic speed	As traffic speeds increase, pedestrian comfort tends to decrease. The posted speed limit is used for this factor as an indicator of traffic speed.	0 40 mph or more 1 35 mph 2 30 mph 3 25 mph or less	--	1.20
Traffic volume	As volumes increase along a segment of roadway, pedestrian comfort tends to decrease. Traffic volume is measured in ADT (average daily traffic) for each street segment as determined in the FMPO's traffic model for the region.	0 more than 12,000 1 6,000 to 12,000 2 2,000 to 6,000 3 less than 2,000	--	1.19
Number of lanes	Lanes are used in this factor as a measure of street width. Narrow streets (fewer lanes) tend to be more inviting for pedestrians, while wider streets (more lanes) are less inviting	0 6 lanes or more 1 5 lanes 2 3 or 4 lanes 3 2 lanes	--	1.17
Median	Medians refer to the longitudinal space in the middle of the street between travel lanes, and can range from a raised landscape median to a paved lane that is used for left turns in both directions (two-way left turn lane). Raised medians along a street help to break up the width of the street, both visually and in terms of crossing distance; and can dramatically improve crossing safety.	0 None 1 TWLTL 2 Raised 3 Raised, landscaped	--	1.14
Functional class	Higher level streets such as arterials or collectors typically provide better continuity and access to destinations, but pedestrian comfort tends to be lower along those streets	0 Major arterial 1 Min arterial Maj collector 2 Min collector Comm local 3 Residential local	--	1.00



Map 11
Pedestrian
environment factors

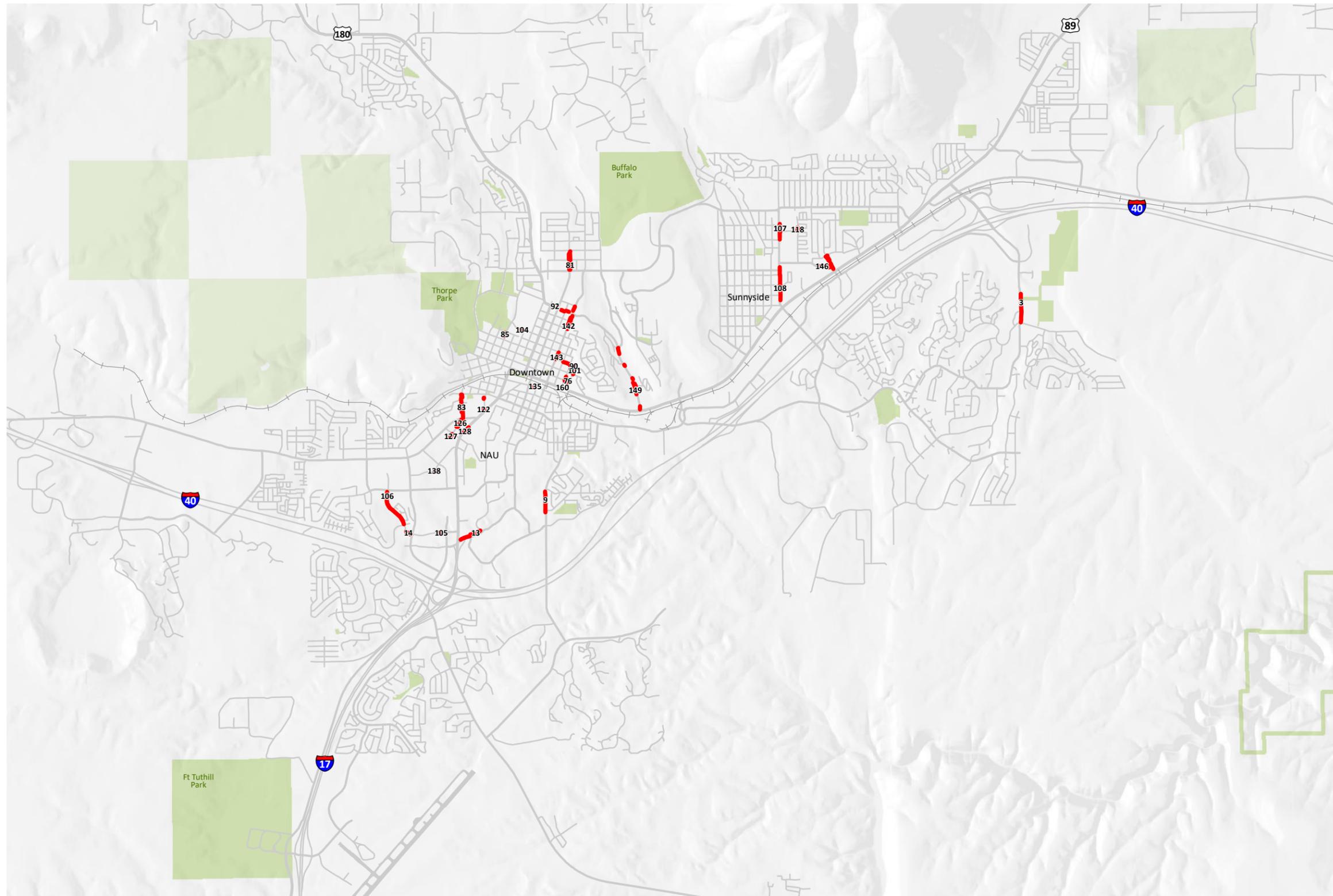
Ped environment
Poor
Fair
Good
Very Good



Appendix B: Recommended projects

Table 25 **Recommended short term sidewalk projects**

<i>ID</i>	<i>Project name</i>	<i>Category</i>	<i>Sub</i>	<i>Juris</i>	<i>Lin feet</i>	<i>Cost est</i>	<i>Score</i>
135	Sidewalk - Phoenix Ave	Sidewalk	Minor	COF	109	13,851	255.4
143	Sidewalk - San Francisco St 3	Sidewalk	Minor	COF	311	22,368	247.8
108	Sidewalk - Fourth St 2	Sidewalk	Major	COF	1461	135,579	244.3
107	Sidewalk - Fourth St 1	Sidewalk	Minor	COF	573	57,870	226.0
76	Sidewalk - Aspen-Verde	Sidewalk	Minor	COF	552	52,920	219.9
128	Sidewalk - Milton Rd	Sidewalk	Minor	ADOT	191	27,876	219.1
92	Sidewalk - Columbus Ave	Sidewalk	Minor	COF	371	43,599	217.2
104	Sidewalk - Elm St	Sidewalk	Minor	COF	120	10,326	214.6
160	Sidewalk - Verde St	Sidewalk	Minor	COF	31	2,100	214.0
142	Sidewalk - San Francisco St 2	Sidewalk	Major	COF	1094	144,726	211.2
9	FUTS - Lone Tree Trail S	FUTS trail	Construct	COF	915	219,307	211.2
138	Sidewalk - Plaza Way 1	Sidewalk	Minor	COF	46	2,748	204.0
90	Sidewalk - Cherry Ave 1	Sidewalk	Minor	COF	587	54,807	200.9
105	Sidewalk - Forest Meadows St 1	Sidewalk	Minor	COF	309	18,564	195.5
13	FUTS - Sinclair Wash Trail 1	FUTS trail	Pave	COF	1001	240,033	195.4
85	Sidewalk - Bonito St 2	Sidewalk	Minor	COF	173	23,157	193.0
101	Sidewalk - Elden St	Sidewalk	Minor	COF	308	34,905	191.6
146	Sidewalk - Steves-Lakin	Sidewalk	Major	COF	1573	153,804	189.0
122	Sidewalk - Malpais Ln	Sidewalk	Minor	COF	151	22,512	184.9
127	Sidewalk - Metz Walk 2	Sidewalk	Minor	COF	155	12,462	181.4
3	FUTS - Country Club Trail N	FUTS trail	Construct	COF	1273	305,326	179.9
126	Sidewalk - Metz Walk 1	Sidewalk	Minor	COF	800	67,800	176.8
149	Sidewalk - Switzer Canyon Dr 2	Sidewalk	Minor	COF	1150	128,658	175.9
81	Sidewalk - Beaver St	Sidewalk	Major	COF	1213	173,136	172.3
83	Sidewalk - Blackbird Roost	Sidewalk	Major	COF	1077	117,000	170.7
118	Sidewalk - King St	Sidewalk	Minor	COF	145	15,237	169.9
14	FUTS - Southwest Crossing Trail	FUTS trail	Construct	COF	255	51,904	157.0
106	Sidewalk - Forest Meadows St 2	Sidewalk	Major	COF	1711	105,798	142.3



Map 12
Recommended short term projects

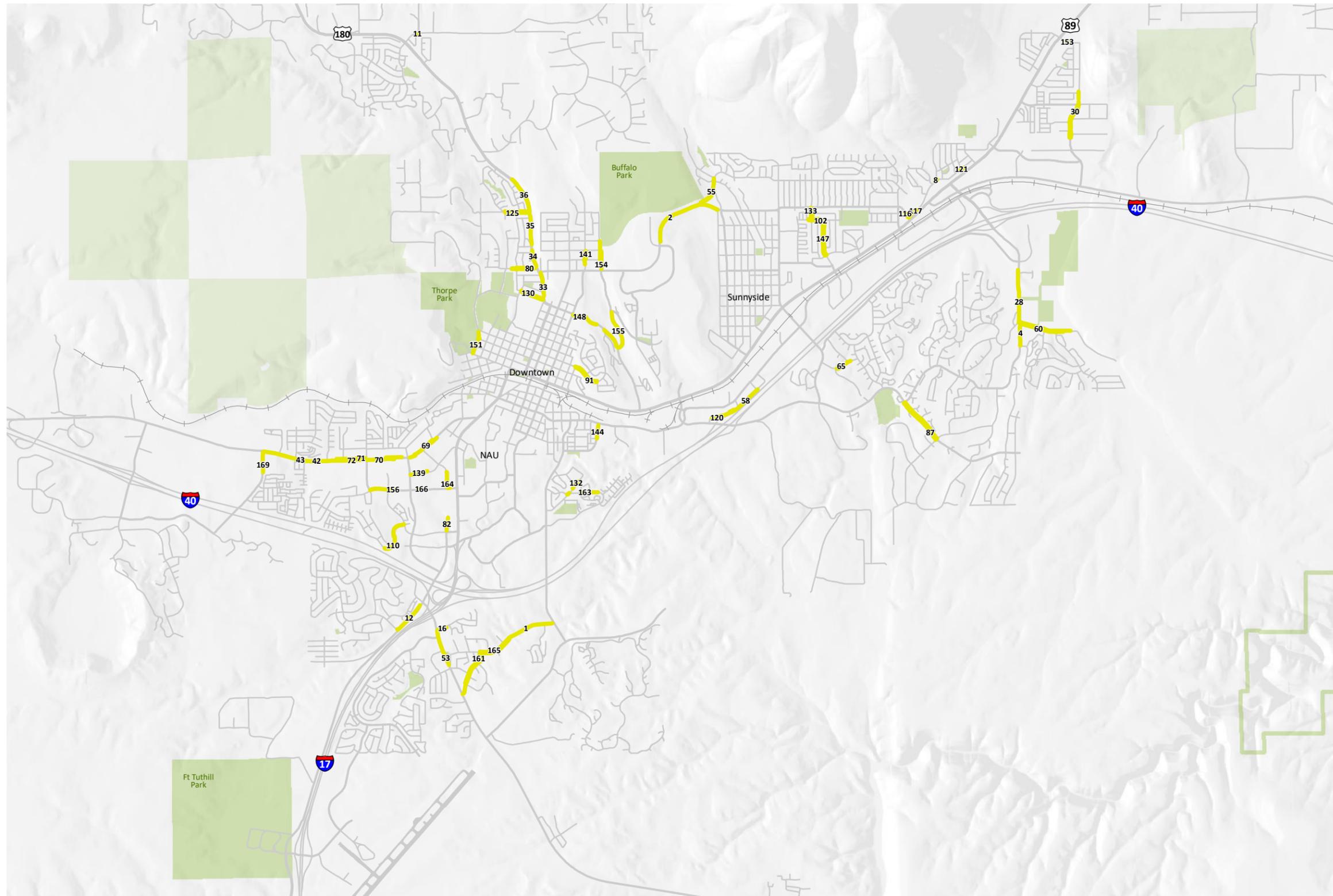
- Recommendation**
- ▬ Short
 - ▬ Medium
 - ▬ Long
 - ▬ NAU
 - ▬ Deferred
 - ▬ Programmed



Table 26 **Recommended medium term sidewalk projects**

<i>ID</i>	<i>Project name</i>	<i>Category</i>	<i>Sub</i>	<i>Juris</i>	<i>Lin feet</i>	<i>Cost est</i>	<i>Score</i>
69	Roadway - West Route 66 1	Roadway	Capital	ADOT	1651	217,605	229.4
70	Roadway - West Route 66 2	Roadway	Dev	ADOT	1899	250,114	216.6
166	Roadway - University Ave 2	Roadway	Dev	COF	262	21,933	209.8
2	FUTS - Cedar Trail	FUTS trail	Pave	COF	3528	718,920	208.3
164	Sidewalk - Yale St	Sidewalk	Minor	COF	843	70,368	203.5
33	Roadway - Fort Valley Rd 1	Roadway	Capital	ADOT	1041	99,708	201.3
130	Sidewalk - Navajo Rd	Sidewalk	Major	COF	2048	214,005	199.7
139	Sidewalk - Plaza Way 3	Sidewalk	Minor	COF	771	56,385	196.9
82	Sidewalk - Beulah Blvd	Sidewalk	Minor	COF	582	38,319	188.3
148	Sidewalk - Switzer Canyon Dr 1	Sidewalk	Major	COF	2122	162,708	187.5
34	Roadway - Fort Valley Rd 2a	Roadway	Dev	ADOT	1114	146,766	187.5
91	Sidewalk - Cherry Ave 2	Sidewalk	Major	COF	2344	224,577	184.0
12	FUTS - Sinclair Wash Trail 2	FUTS trail	Pave	COF	1488	356,725	181.7
147	Sidewalk - Steves Blvd	Sidewalk	Major	COF	2797	281,445	181.6
133	Sidewalk - Patterson Blvd 1	Sidewalk	Major	COF	936	99,171	180.6
132	Sidewalk - Paseo del Flag	Sidewalk	Minor	COF	480	65,370	177.8
72	Roadway - West Route 66 4	Roadway	Capital	ADOT	2134	281,184	177.0
102	Sidewalk - Elder Dr	Sidewalk	Major	COF	1372	151,881	175.0
53	Roadway - Lake Mary Rd	Roadway	Capital	COF	1292	170,256	174.5
87	Sidewalk - Butler Ave 1	Sidewalk	Major	COF	4161	284,346	174.3
80	Sidewalk - Beal Rd	Sidewalk	Major	COF	2001	192,984	172.9
42	Roadway - FUTS - Route 66 W Trail 1	Roadway	Dev	ADOT	2414	578,795	170.5
156	Sidewalk - University Ave	Sidewalk	Major	COF	1183	87,666	170.2
165	Sidewalk - Zuni Dr	Sidewalk	Major	COF	2817	322,659	170.2
71	Roadway - West Route 66 3	Roadway	Dev	ADOT	603	79,462	168.5
55	Roadway - Linda Vista Dr 2	Roadway	Capital	COF	2113	240,630	167.7
28	Roadway - Country Club Dr	Roadway	Capital	COF	2343	262,569	165.8
43	Roadway - FUTS - Route 66 W Trail 2	Roadway	Dev	ADOT	453	108,611	165.5
116	Sidewalk - Kaspar-Lockett	Sidewalk	Minor	COF	424	41,853	164.4
35	Roadway - Fort Valley Rd 2b	Roadway	Capital	ADOT	920	121,218	161.6
141	Sidewalk - San Francisco St 1	Sidewalk	Minor	COF	742	107,907	159.9
1	FUTS - Bow & Arrow Trail	FUTS trail	Pave	COF	2089	500,910	159.0
154	Sidewalk - Turquoise Dr 1	Sidewalk	Major	COF	1508	141,561	158.8
36	Roadway - Fort Valley Rd 3	Roadway	Dev	ADOT	1691	222,828	158.6
16	FUTS - Zuni Trail	FUTS trail	Construct	COF	672	161,136	156.4
161	Sidewalk - Walapai Dr	Sidewalk	Major	COF	3371	318,810	155.0

163	Sidewalk - Woodland Dr	Sidewalk	Minor	COF	675	107,526	154.9
151	Sidewalk - Thorpe Rd	Sidewalk	Minor	COF	969	106,098	154.5
117	Sidewalk - Kaspar Dr	Sidewalk	Minor	COF	113	13,530	152.7
169	Roadway - Woody Mountain Rd 1	Roadway	Dev	COF	936	123,398	151.6
4	FUTS - Country Club Trail S	FUTS trail	Construct	COF	960	230,168	145.6
110	Sidewalk - Highland Mesa Rd	Sidewalk	Major	COF	1675	113,325	145.3
155	Sidewalk - Turquoise Dr 2	Sidewalk	Major	COF	1804	175,302	144.9
60	Roadway - Old Walnut Canyon Dr	Roadway	Capital	COF	4156	469,384	141.6
121	Sidewalk - Lynch Ave	Sidewalk	Minor	COF	211	16,059	141.3
125	Sidewalk - Meade Ln	Sidewalk	Major	COF	1931	192,384	138.5
144	Sidewalk - Sawmill Rd	Sidewalk	Minor	COF	589	45,582	136.8
120	Sidewalk - Lucky Ln	Sidewalk	Minor	COF	596	55,986	134.0
8	FUTS - Linda Vista Trail	FUTS trail	Construct	COF	174	41,772	132.9
11	FUTS - Schultz Pass Trail	FUTS trail	Construct	COF	79	18,977	131.6
65	Roadway - Sparrow Ave	Roadway	Dev	COF	706	84,549	127.8
30	Roadway - Dodge Ave	Roadway	Capital	COF	3236	387,575	125.9
58	Roadway - Lucky Ln	Roadway	Capital	COF	2233	267,492	123.3
153	Sidewalk - Trails End Dr	Sidewalk	Minor	COF	104	16,722	97.9



Map 13
Recommended medium term projects

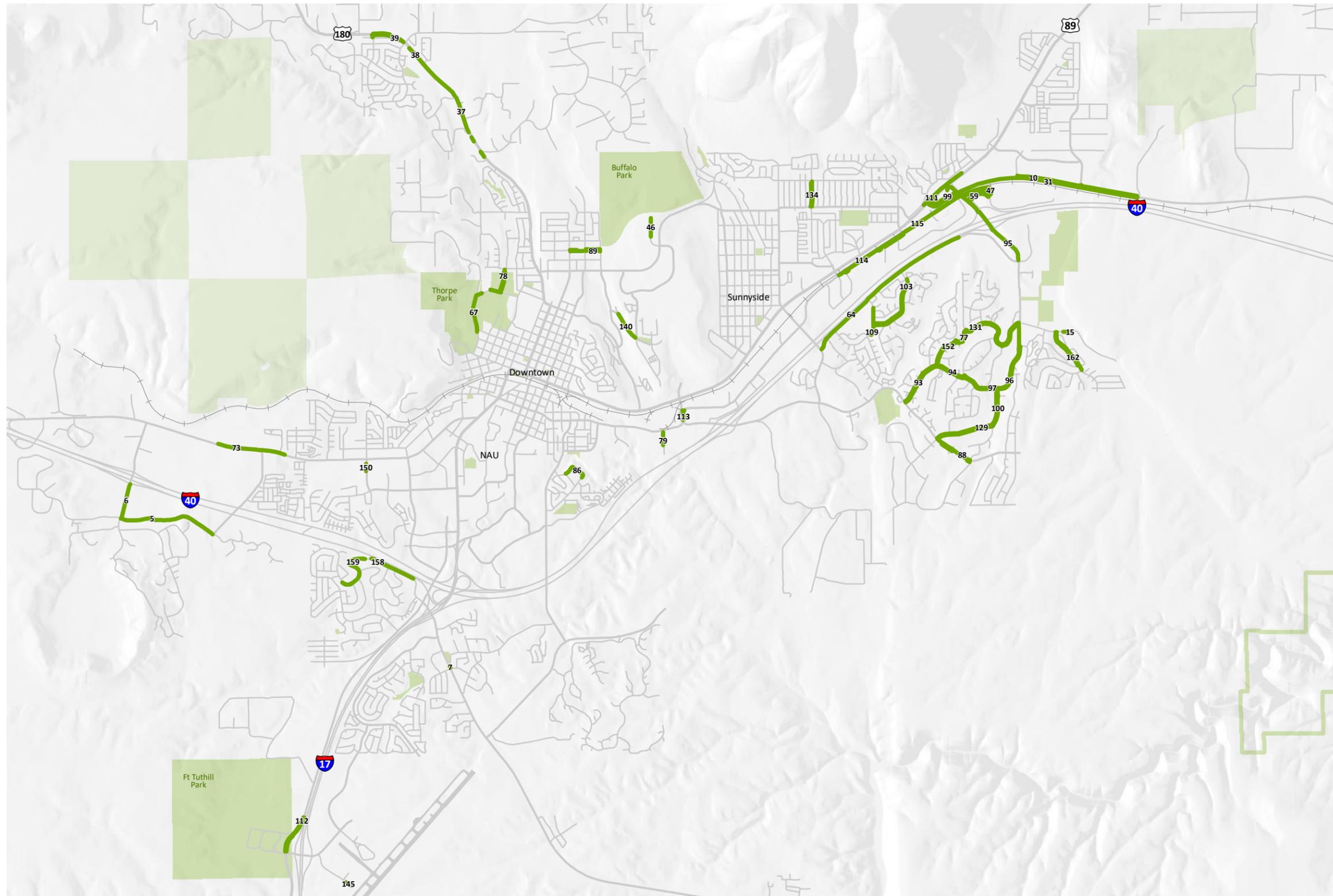
- Recommendation**
-  Short
 -  Medium
 -  Long
 -  NAU
 -  Deferred
 -  Programmed



Table 27 **Recommended long term sidewalk projects**

<i>ID</i>	<i>Project name</i>	<i>Category</i>	<i>Sub</i>	<i>Juris</i>	<i>Lin feet</i>	<i>Cost est</i>	<i>Score</i>
111	Sidewalk - Highway 89	Sidewalk	Major	COF	2203	158,592	189.1
99	Sidewalk - East Route 66 2	Sidewalk	Major	COF	2160	242,892	187.3
114	Sidewalk - Industrial Dr 1	Sidewalk	Major	COF	4430	338,487	187.1
7	FUTS - Lake Mary Trail	FUTS trail	Construct	COF	83	16,930	183.8
95	Sidewalk - Country Club Dr 1	Sidewalk	Major	COF	4688	334,497	181.1
59	Roadway - Nestle-Purina Dr	Roadway	Dev	COF	1837	232,944	179.2
86	Sidewalk - Brannen St	Sidewalk	Major	COF	1143	177,216	178.8
78	Sidewalk - Aztec St	Sidewalk	Major	COF	1962	204,552	169.8
112	Sidewalk - Highway 89A	Sidewalk	Major	ADOT	3431	370,560	166.7
47	Roadway - Industrial Dr 1	Roadway	Capital	COF	4735	623,973	166.0
89	Sidewalk - Cedar Ave	Sidewalk	Major	COF	2180	315,693	163.8
73	Roadway - West Route 66 5	Roadway	Dev	ADOT	3002	502,182	162.8
113	Sidewalk - Huntington Dr	Sidewalk	Minor	COF	538	42,726	161.2
134	Sidewalk - Patterson Blvd 2	Sidewalk	Major	COF	2040	236,676	158.0
38	Roadway - Fort Valley Rd 5	Roadway	Capital	ADOT	2957	389,561	155.3
31	Roadway - East Route 66	Roadway	Capital	COF	8999	1,185,634	154.9
115	Sidewalk - Industrial Dr 2	Sidewalk	Major	COF	1691	130,470	154.7
64	Roadway - Soliere Ave	Roadway	Capital	COF	7980	955,791	154.2
37	Roadway - Fort Valley Rd 4	Roadway	Capital	ADOT	2038	260,580	152.9
93	Sidewalk - Continental Dr 1	Sidewalk	Major	COF	4071	324,798	152.3
150	Sidewalk - Thompson St	Sidewalk	Minor	COF	314	22,203	150.9
88	Sidewalk - Butler Ave 2	Sidewalk	Major	COF	2320	154,962	149.2
67	Roadway - Thorpe Rd	Roadway	Capital	COF	2301	275,648	146.7
10	FUTS - Route 66 Trail	FUTS trail	Construct	COF	5393	1,292,981	143.9
39	Roadway - Fort Valley Rd 6	Roadway	Capital	ADOT	2283	299,340	141.8
94	Sidewalk - Continental Dr 2	Sidewalk	Major	COF	2483	191,280	139.0
6	FUTS - Dry Lake Trail 2	FUTS trail	Construct	COF	1498	359,176	137.7
15	FUTS - Walnut Canyon Trail E	FUTS trail	Construct	COF	321	76,980	136.6
96	Sidewalk - Country Club Dr 2	Sidewalk	Major	COF	5671	453,648	135.5
79	Sidewalk - Babbitt Dr	Sidewalk	Minor	COF	571	41,010	135.0
131	Sidewalk - Oakmont Dr	Sidewalk	Major	COF	7526	633,111	128.2
162	Sidewalk - Walnut Hills Dr	Sidewalk	Major	COF	3963	285,018	127.4
140	Sidewalk - Ponderosa Pkwy	Sidewalk	Major	COF	1316	122,385	127.0
77	Sidewalk - Augusta Dr	Sidewalk	Major	COF	1585	141,450	126.1
129	Sidewalk - Mt Pleasant Dr	Sidewalk	Major	COF	5014	418,278	124.0
97	Sidewalk - Country Club Dr 3	Sidewalk	Major	COF	3288	287,316	123.9

152	Sidewalk - Timberline Rd	Sidewalk	Major	COF	2858	281,517	122.8
5	FUTS - Dry Lake Trail 1	FUTS trail	Pave	COF	4367	1,047,120	122.0
100	Sidewalk - Edgewood St	Sidewalk	Major	COF	3286	304,023	121.2
46	Roadway - Gemini	Roadway	Capital	COF	820	98,214	117.8
103	Sidewalk - Elk Run St	Sidewalk	Major	COF	5313	488,181	115.2
158	Sidewalk - University Heights Dr 1	Sidewalk	Major	COF	2073	124,356	99.9
109	Sidewalk - Fox Lair Dr	Sidewalk	Major	COF	1144	91,365	99.1
145	Sidewalk - Shamrell Blvd	Sidewalk	Minor	COF	324	37,830	97.1
159	Sidewalk - University Heights Dr 2	Sidewalk	Major	COF	2216	230,160	84.5



Map 14
Recommended long term projects

- Recommendation**
- ▬ Short
 - ▬ Medium
 - ▬ Long
 - ▬ NAU
 - ▬ Deferred
 - ▬ Programmed



Table 28 Recommended NAU sidewalk projects

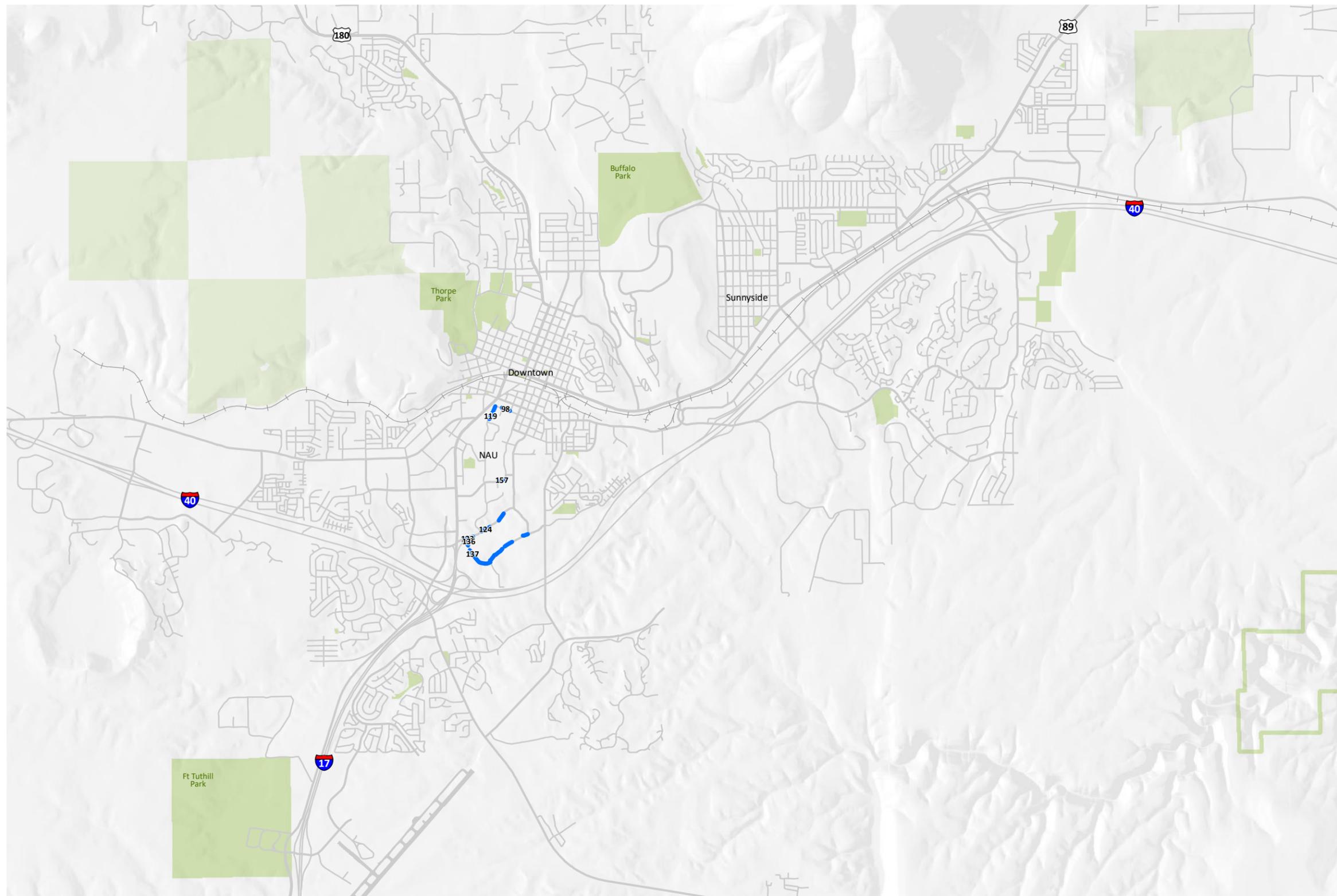
<i>ID</i>	<i>Project name</i>	<i>Category</i>	<i>Sub</i>	<i>Juris</i>	<i>Lin feet</i>	<i>Cost est</i>	<i>Score</i>
123	Sidewalk - McConnell Dr 1	Sidewalk	Minor	NAU	329	36,312	195.7
98	Sidewalk - Dupont Ave	Sidewalk	Minor	NAU	382	29,244	186.0
119	Sidewalk - Knoles Dr	Sidewalk	Minor	NAU	605	42,600	177.4
136	Sidewalk - Pine Knoll Dr 1	Sidewalk	Minor	NAU	645	71,607	175.4
124	Sidewalk - McConnell Dr 2	Sidewalk	Minor	NAU	810	61,851	172.6
157	Sidewalk - University Dr	Sidewalk	Minor	NAU	166	23,034	162.4
137	Sidewalk - Pine Knoll Dr 2	Sidewalk	Major	NAU	2521	178,233	154.7

Table 29 Recommended deferred sidewalk projects

<i>ID</i>	<i>Project name</i>	<i>Category</i>	<i>Sub</i>	<i>Juris</i>	<i>Lin feet</i>	<i>Cost est</i>	<i>Score</i>
68	Roadway - University Ave 1	Roadway	Dev	COF	713	59,744	218.4
56	Roadway - Lone Tree Rd 1	Roadway	Capital	COF	1865	245,789	209.1
167	Roadway - Plaza Way 2	Roadway	Dev	COF	303	25,355	203.3
48	Roadway - Industrial Dr 2	Roadway	Dev	COF	1612	154,399	180.3
40	Roadway - Fourth St	Roadway	Capital	COF	1179	155,344	178.7
57	Roadway - Lone Tree Rd 2	Roadway	Capital	COF	5667	604,895	170.1
26	Roadway - Beulah Blvd	Roadway	Capital	COF	11091	1,461,357	166.7
27	Roadway - Butler-Fourth	Roadway	Capital	COF	8952	1,155,848	166.3
41	Roadway - FUTS - Munds Trail	Roadway	Dev	COF	9376	2,183,980	162.4
49	Roadway - J.W. Powell Blvd 1	Roadway	Capital	ADOT	1536	202,380	160.1
75	Roadway - Zuni Dr	Roadway	Dev	COF	2051	245,636	159.1
44	Roadway - FUTS - Route 66 W Trail 3	Roadway	Dev	ADOT	1940	465,167	154.8
66	Roadway - Thompson St	Roadway	Dev	COF	1011	84,680	151.4
51	Roadway - Kaibab Ln	Roadway	Dev	COF	587	70,310	143.7
74	Roadway - Woody Mountain Rd 2	Roadway	Capital	COF	1752	230,924	143.2
168	Roadway - FUTS - Woody Mtn Trail 2	Roadway	Capital	COF	1641	393,461	142.3
45	Roadway - FUTS - Woody Mtn Trail 1	Roadway	Dev	COF	2813	674,572	139.2
54	Roadway - Linda Vista Dr 1	Roadway	Capital	COF	484	40,551	139.2
32	Roadway - Flag Ranch Rd	Roadway	Dev	COF	1480	177,266	137.7
52	Roadway - Kiltie Ln	Roadway	Capital	COF	4370	523,404	122.0
62	Roadway - Pulliam Dr	Roadway	Dev	COF	3088	369,802	121.4
63	Roadway - Schultz Pass Rd	Roadway	Dev	COF	246	29,473	109.8
29	Roadway - Dakota St	Roadway	Capital	COF	733	87,771	104.7
50	Roadway - J.W. Powell Blvd 2	Roadway	Capital	COF	3849	507,138	95.3

Table 30 **Programmed sidewalk projects**

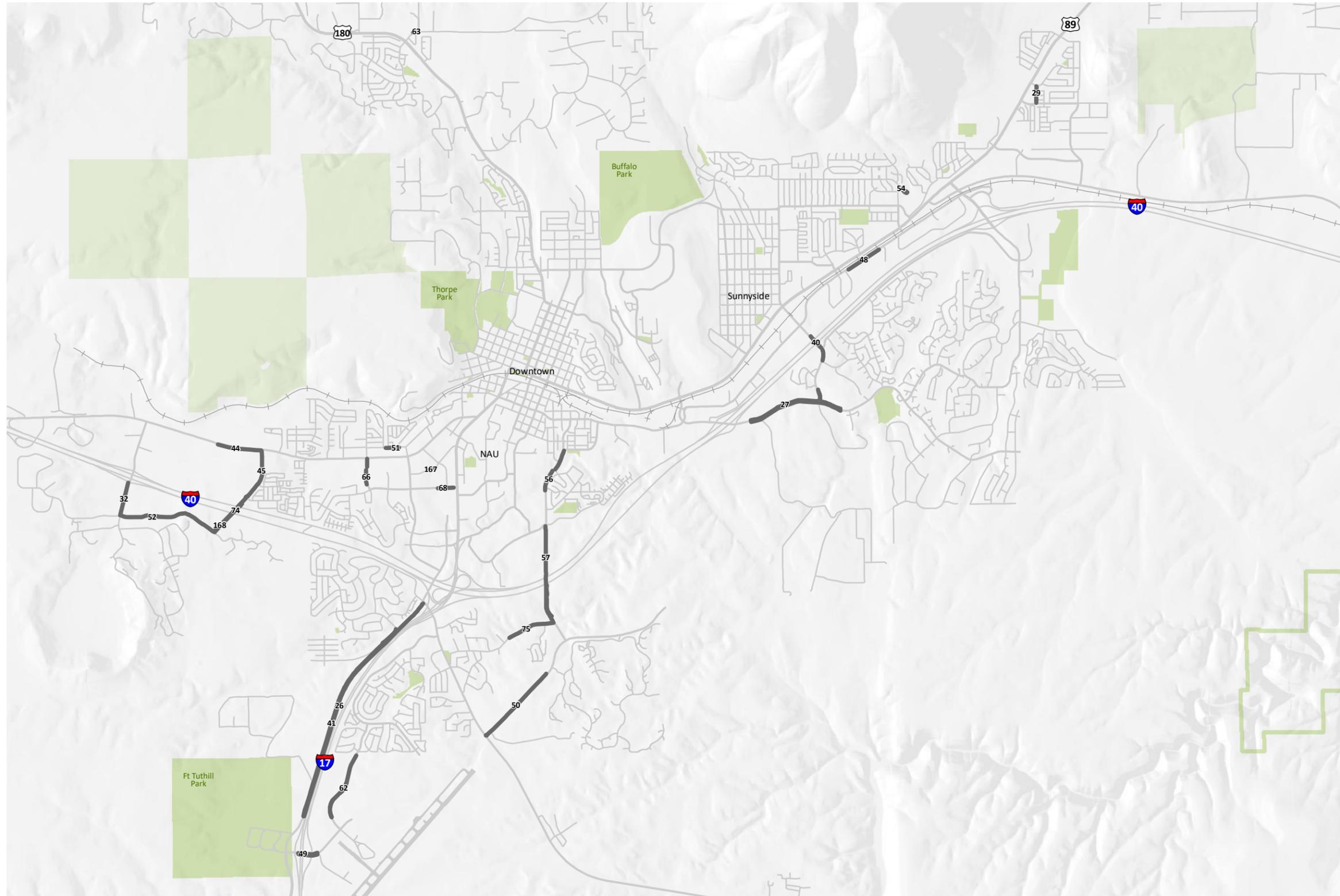
<i>ID</i>	<i>Project name</i>	<i>Category</i>	<i>Sub</i>	<i>Juris</i>	<i>Lin feet</i>	<i>Cost est</i>	<i>Score</i>
24	Planned - Sunnyside Sidewalks	Programmed	Capital	COF	3868	0	222.5
17	Planned - ADOT - McConnell Dr	Programmed	ADOT	COF	564	0	191.0
25	Planned - The Lofts Development	Programmed	Dev	COF	1888	0	188.3
18	Planned - Brannen Cir	Programmed	Capital	COF	527	0	183.5
20	Planned - FUTS - Fourth Street Trail	Programmed	FUTS	COF	1911	0	176.0
21	Planned - FUTS - Pine Knoll Trail	Programmed	FUTS	COF	707	0	172.0
19	Planned - Country Club/I40 Dev	Programmed	Dev	COF	6758	0	156.6
23	Planned - Mountain Trails Dev	Programmed	Dev	COF	284	0	156.2
22	Planned - Industrial Dr	Programmed	Capital	COF	1047	0	154.2



Map 15
NAU sidewalk projects

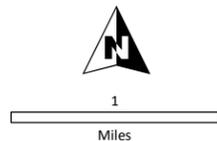
- Recommendation**
- Short
 - Medium
 - Long
 - NAU
 - Deferred
 - Programmed

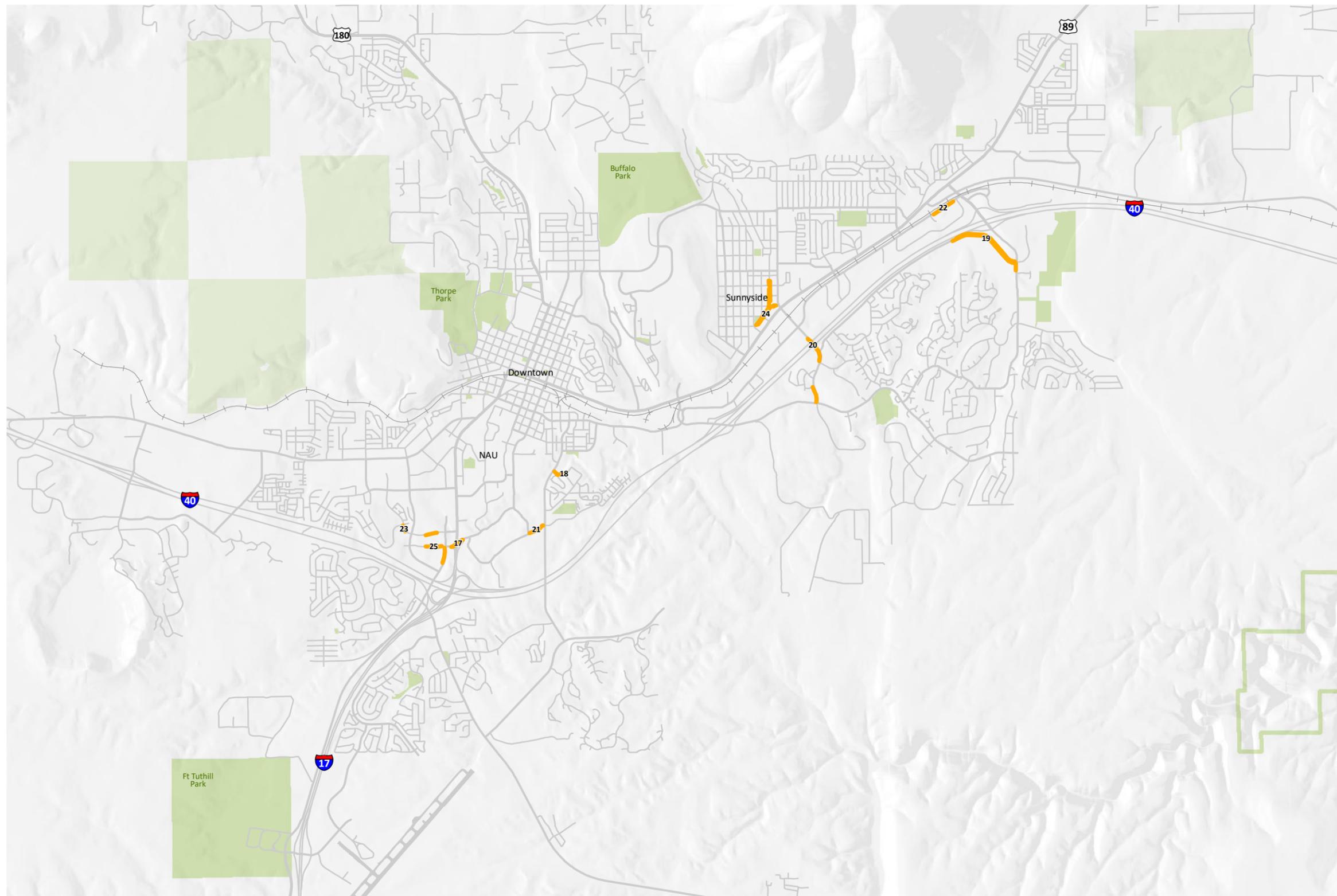




Map 16
Recommended deferred projects

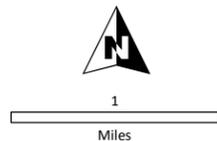
- Recommendation**
- ▬ Short
 - ▬ Medium
 - ▬ Long
 - ▬ NAU
 - ▬ Deferred
 - ▬ Programmed





Map 17
**Programmed
sidewalk projects**

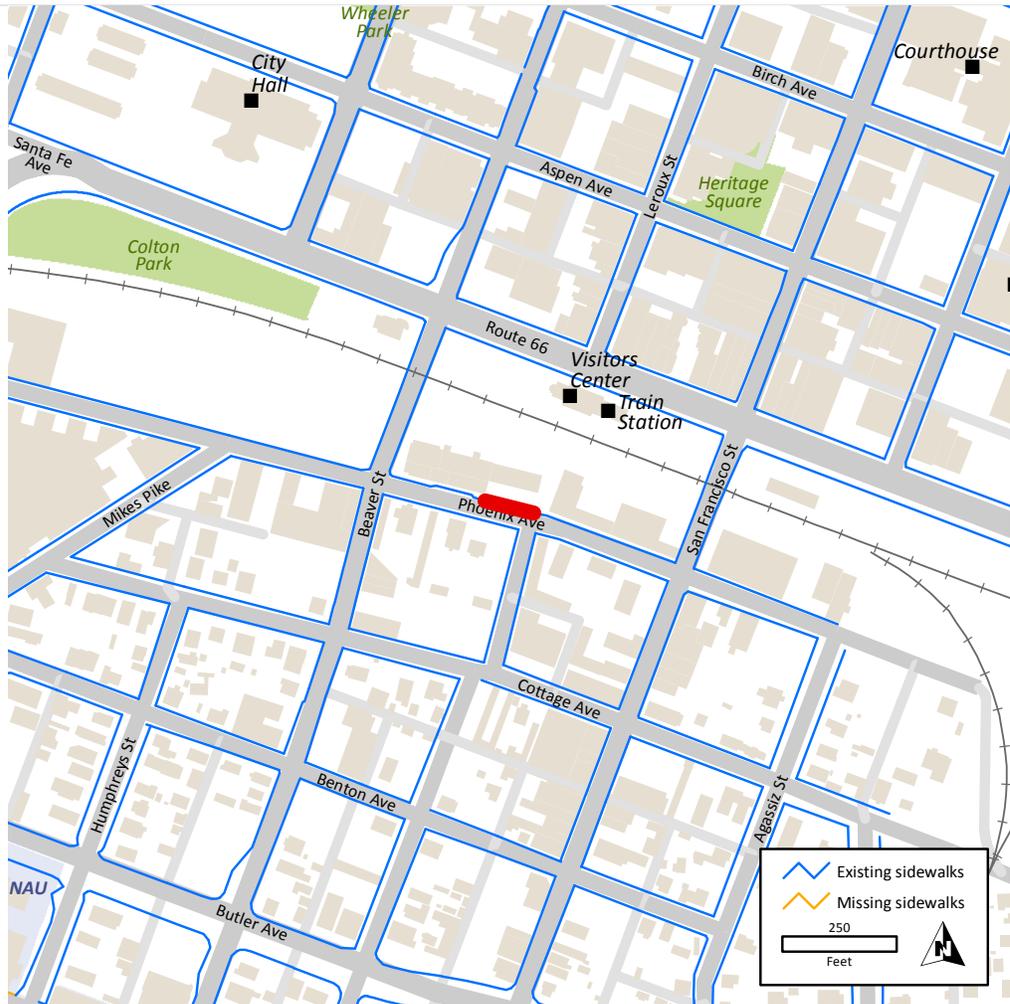
- Recommendation**
- Short
 - Medium
 - Long
 - NAU
 - Deferred
 - Programmed



Appendix C: Short term project recommendations

Minor sidewalk projects

Project 135 Sidewalk – Phoenix Ave



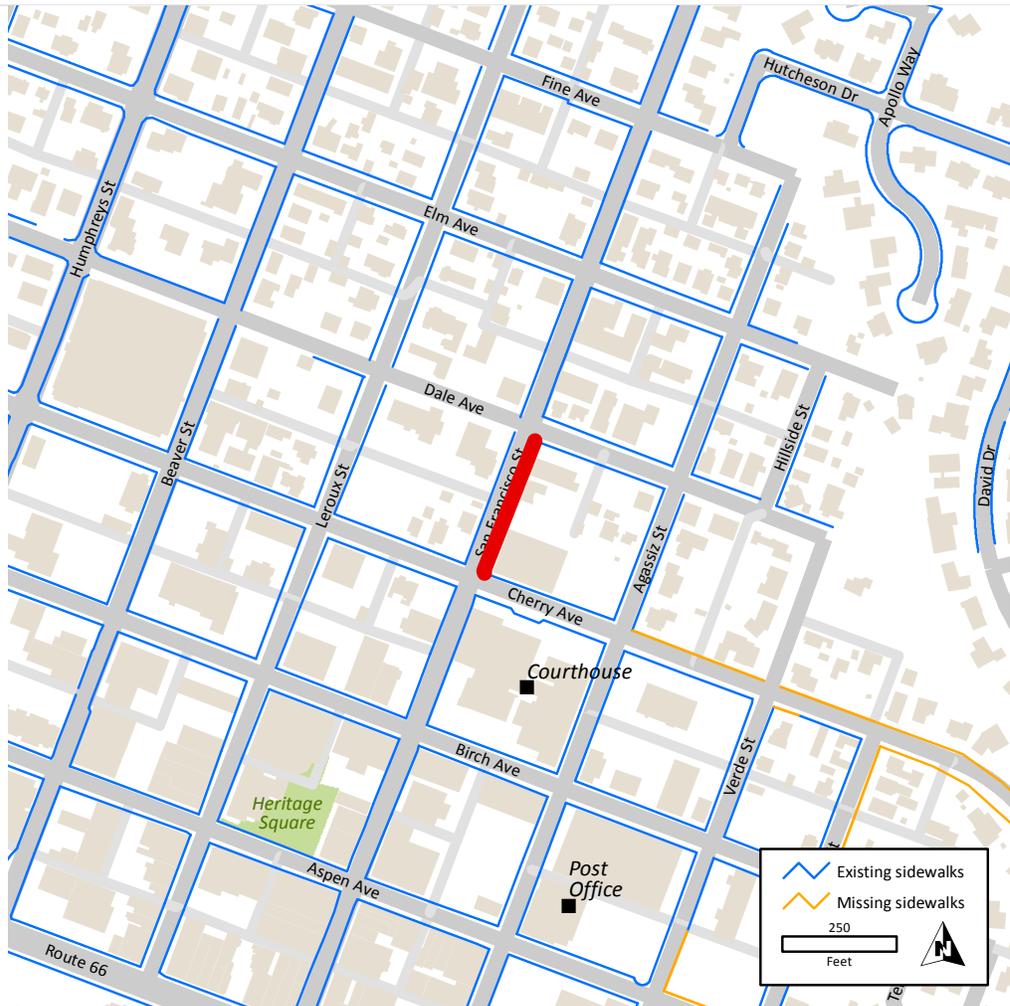
Location North side of Phoenix Avenue, midway between San Francisco and Beaver Streets

Category Sidewalk - minor **Score** 255.4

Length 109 linear feet **Cost est** \$13,851

- Considerations**
- Will require removal of existing landscaping
 - There is no curb-and-gutter adjacent to the missing sidewalk
 - There is no curb-and-gutter adjacent to the missing sidewalk
 - The sidewalk alignment crosses 4 existing head-in parking spaces

Project 143 Sidewalk – San Francisco St 3



Location East side of San Francisco Street, between Cherry and Dale Avenues

Category Sidewalk - minor

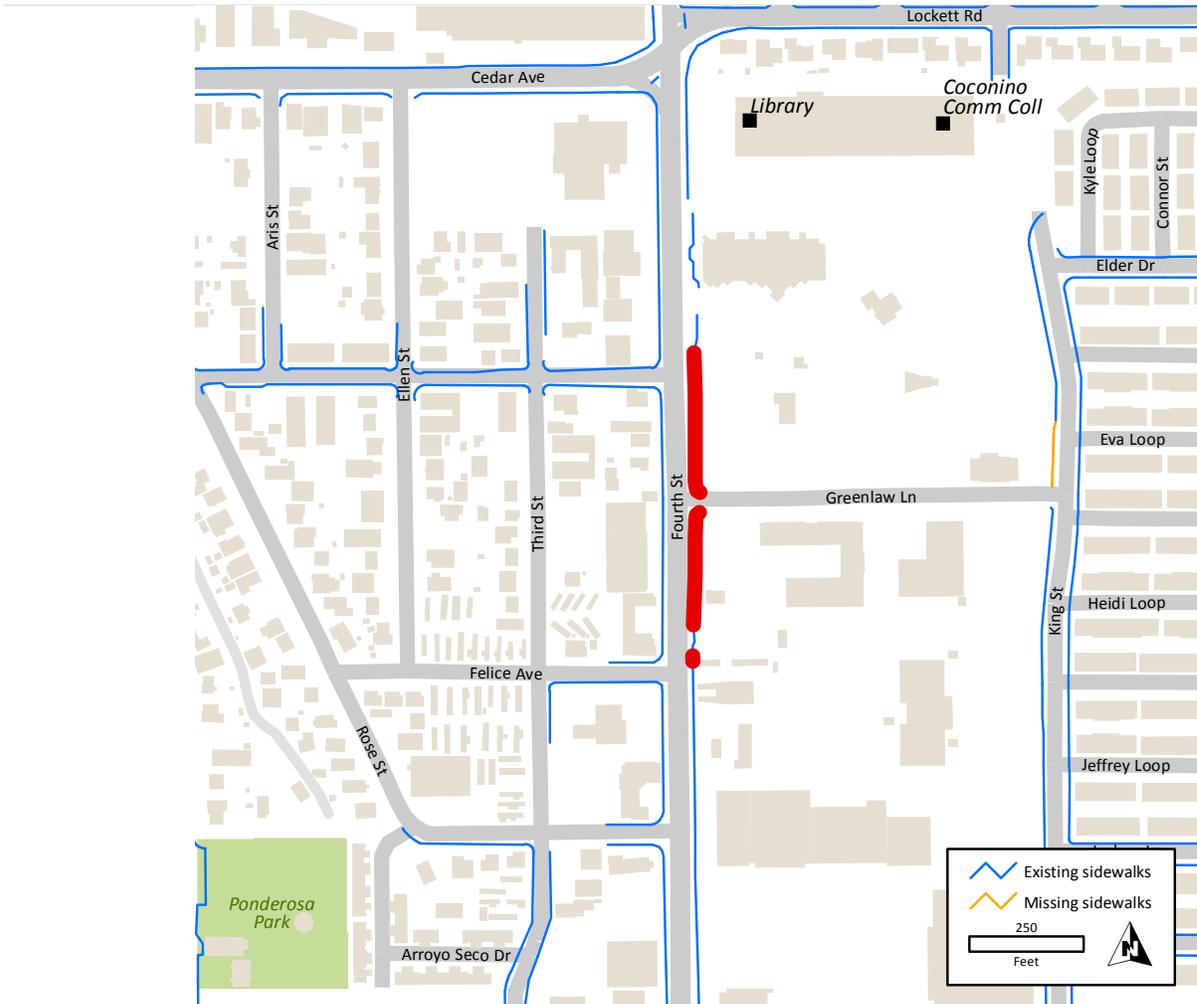
Score 247.8

Length 311 linear feet

Cost est \$22,368

- Considerations**
- Will require removal of existing landscaping
 - There are moderate slopes beyond the street edge; retaining walls may be needed

Project 107 Sidewalk – Fourth St 1



Location East side of Fourth Street, between Felice and Dortha Avenues

Category Sidewalk - minor

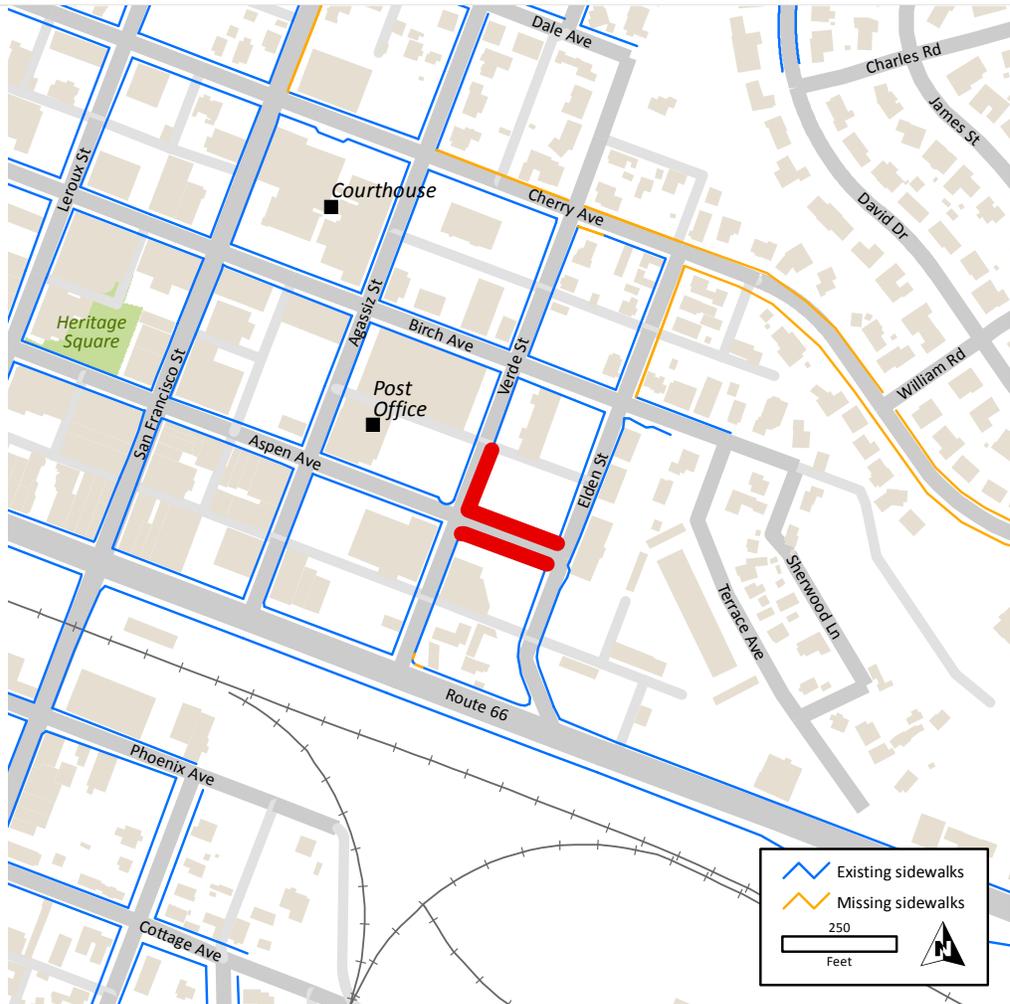
Score 226.0

Length 573 linear feet

Cost est \$57,870

- Considerations**
- Additional right-of-way is needed
 - Some existing Ponderosa pine trees may be affected
 - May be conflicts with existing utility boxes and poles

Project **076 Sidewalk – Aspen-Verde**



Location Both sides of Aspen Avenue between Verde and Elden Streets; east side of Verde Street between Aspen and Beaver Streets

Category Sidewalk - minor **Score** 219.9

Length 552 linear feet **Cost est** \$52,920

- Considerations**
- May require additional right-of-way
 - A buffer should be provided between interior parking and sidewalk to keep vehicles from encroaching into the sidewalk
 - The sidewalk will cross several driveways that should be rebuilt to current standards
 - May necessitate realignment of existing parking spaces

Project **128 Sidewalk – Milton Rd**



Location East side of Milton Road, generally between Route 66 and Riordan Road

Category Sidewalk - minor

Score 219.1

Length 191 linear feet

Cost est \$27,876

- Considerations**
- A buffer should be provided between interior parking and sidewalk to keep vehicles from encroaching into the sidewalk
 - There are two existing driveway along the frontage that should be built to standards and possibly narrowed

Project **092 Sidewalk – Columbus Ave**



Location Along both sides of Columbus Avenue, between Humphreys and San Francisco Streets

Category Sidewalk - minor **Score** 217.2

Length 371 linear feet **Cost est** \$43,599

- Considerations**
- The sidewalk will cross several driveways that should be rebuilt to current standards
 - A buffer should be provided between interior parking and sidewalk to keep vehicles from encroaching into the sidewalk
 - May necessitate realignment of existing parking spaces

Project **104 Sidewalk – Elm St**



Location South side of Elm Street, west of Sitgreaves Street

Category Sidewalk - minor

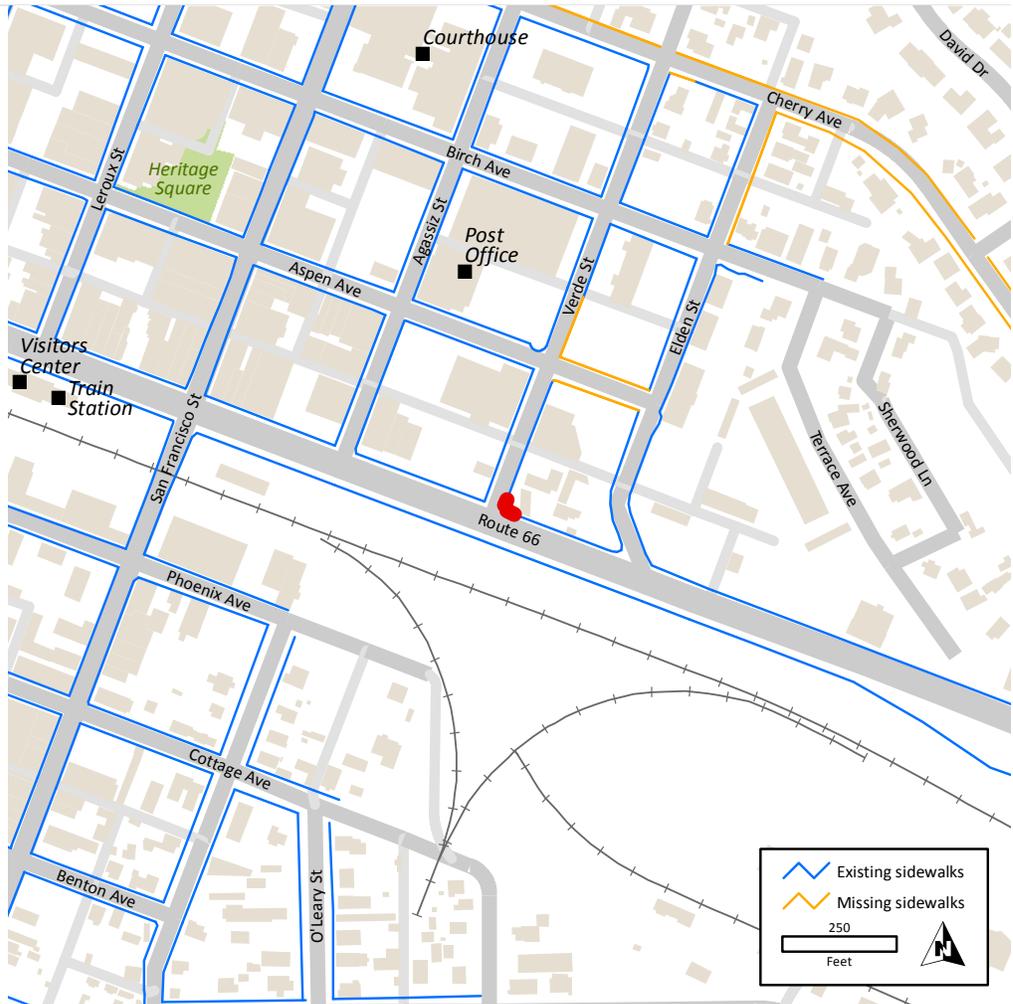
Score 214.6

Length 120 linear feet

Cost est \$10,326

Considerations ■ No obvious constructability issues

Project **160 Sidewalk – Verde St**



Location Northeast corner of Route 66 and Verde Street

Category Sidewalk - minor **Score** 214.0

Length 31 linear feet **Cost est** \$2,100

- Considerations**
- Some existing landscaping may be affected
 - May be conflicts with existing utility boxes

Project **138 Sidewalk – Plaza Way 1**



Location South side of Plaza Way, west of Yale Street

Category Sidewalk - minor

Score 204.0

Length 46 linear feet

Cost est \$2,748

Considerations ■ No obvious constructability issues

Project **090 Sidewalk – Cherry Ave 1**



Location Both sides of Cherry Ave, between Agassiz St and Elden St

Category Sidewalk - minor

Score 200.9

Length 587 linear feet

Cost est \$54,807

Considerations ■ Some existing landscaping and other features may be affected

Project 105 Sidewalk - Forest Meadows St 1



Location South side of Forest Meadows St, west of Beulah Blvd

Category Sidewalk - minor **Score** 195.5

Length 309 linear feet **Cost est** \$18,564

- Considerations**
- Some slopes beyond the street edge; retaining walls may be needed
 - May be conflicts with existing utility boxes

Project **85 Sidewalk - Bonito St 2**



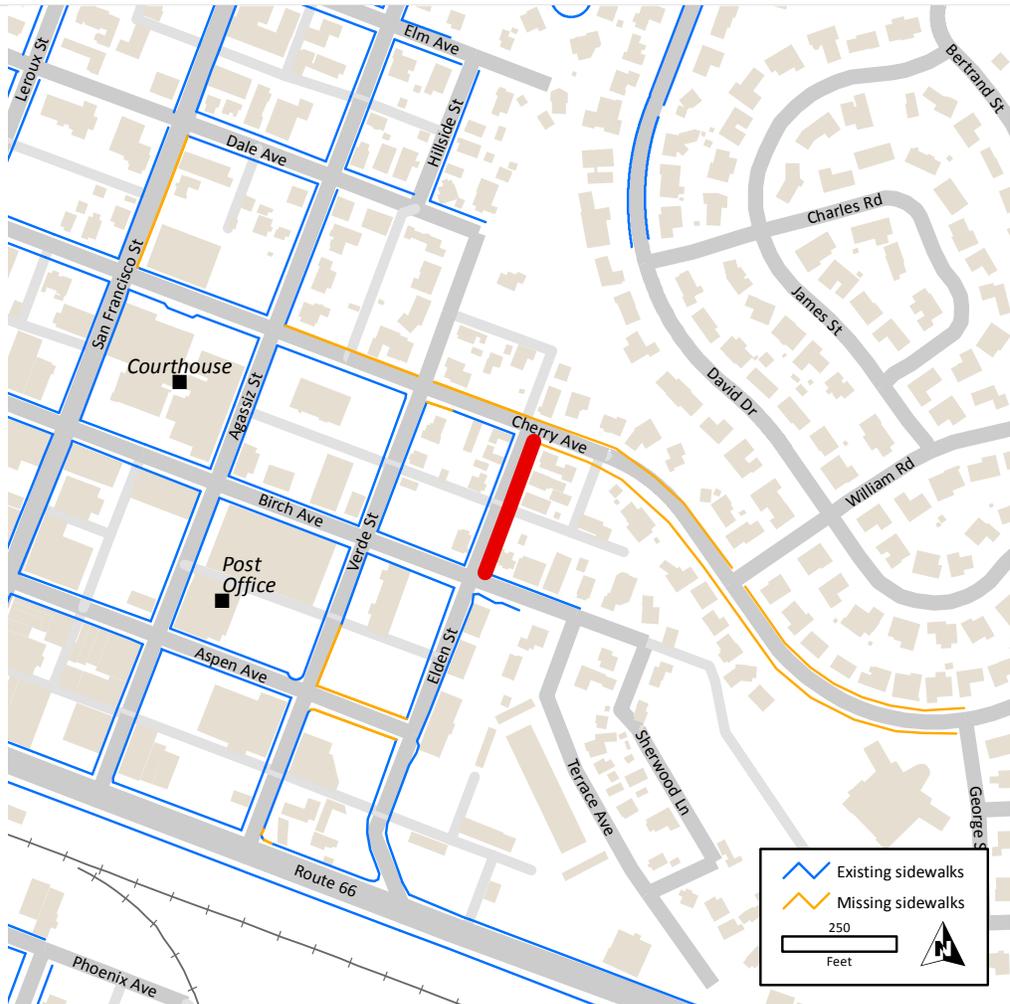
Location West side of Bonito Street, between Cherry Ave and Dale Ave

Category Sidewalk - minor **Score** 193.0

Length 173 linear feet **Cost est** \$23,157

- Considerations**
- May necessitate removal of informal parking spaces
 - There is no curb-and-gutter adjacent to the missing sidewalk

Project **101 Sidewalk - Elden St**



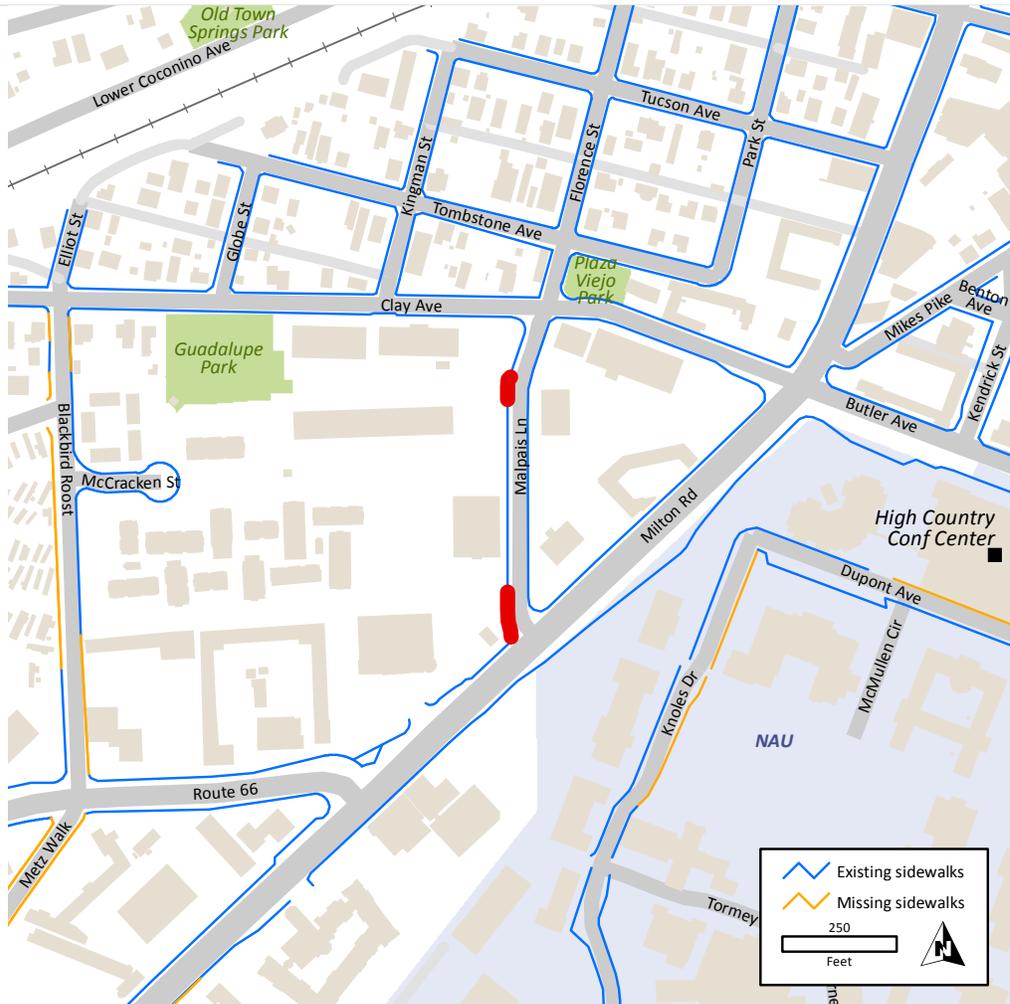
Location West side of Elden Street, between Birch Ave and Cherry Ave

Category Sidewalk - minor **Score** 191.6

Length 308 linear feet **Cost est** \$34,905

- Considerations**
- Will require removal of existing landscaping
 - There are moderate slopes beyond the street edge; retaining walls may be needed

Project 122 Sidewalk - Malpais Ln



Location East side of Malpais Lane, between Route 66 and Clay Avenue

Category Sidewalk - minor **Score** 184.9

Length 151 linear feet **Cost est** \$22,512

- Considerations**
- Existing driveway at Dairy Queen must be narrowed and rebuilt, this may affect access to existing on-site parking
 - Utility pole may obstruct northern segment

Project **127 Sidewalk - Metz Walk 2**



Location South side of Metz Walk, west of Riordan Road

Category Sidewalk - minor

Score 181.4

Length 155 linear feet

Cost est \$12,462

- Considerations**
- Will require removal of existing line of trees and wall
 - There is a pinch point between the street and an existing garage
 - New sidewalk will dead-end in private parking lot

Project 126 Sidewalk - Metz Walk 1



Location Both sides of Metz Walk, south of Route 66

Category Sidewalk - minor

Score 176.8

Length 800 linear feet

Cost est \$67,800

- Considerations**
- The sidewalk will cross several driveways that should be rebuilt to current standards
 - A buffer should be provided between interior parking and sidewalk to keep vehicles from encroaching into the sidewalk
 - May be conflicts with existing utility poles
 - May require additional right-of-way

Project 149 Sidewalk - Switzer Canyon Dr 2



Location Both sides of Switzer Canyon Drive, between Route 66 and Turquoise Drive

Category Sidewalk - minor

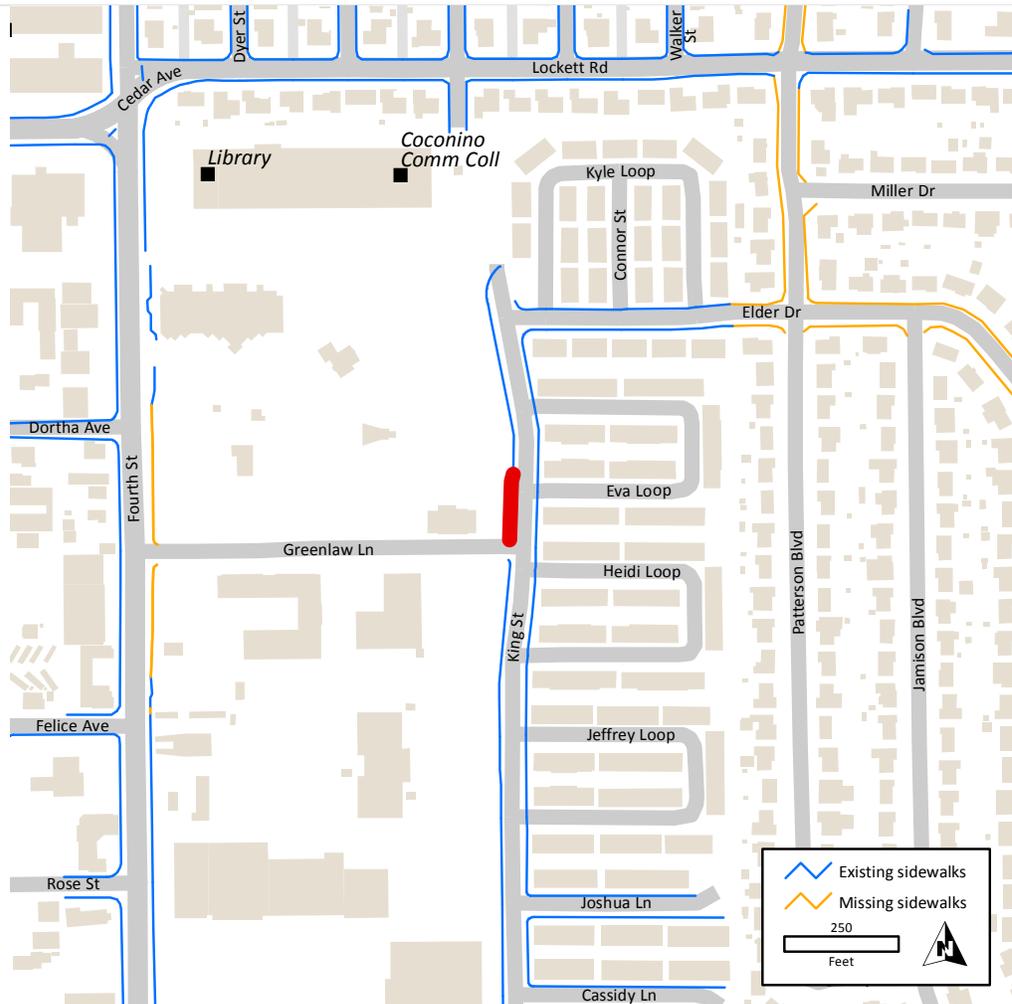
Score 175.9

Length 1150 linear feet

Cost est \$128,658

- Considerations**
- A buffer should be provided between interior parking and sidewalk to keep vehicles from encroaching into the sidewalk
 - May necessitate realignment of existing parking spaces

Project **118 Sidewalk - King St**



Location East side of King Street, between Greenlaw Lane and Elder Drive

Category Sidewalk - minor

Score 169.9

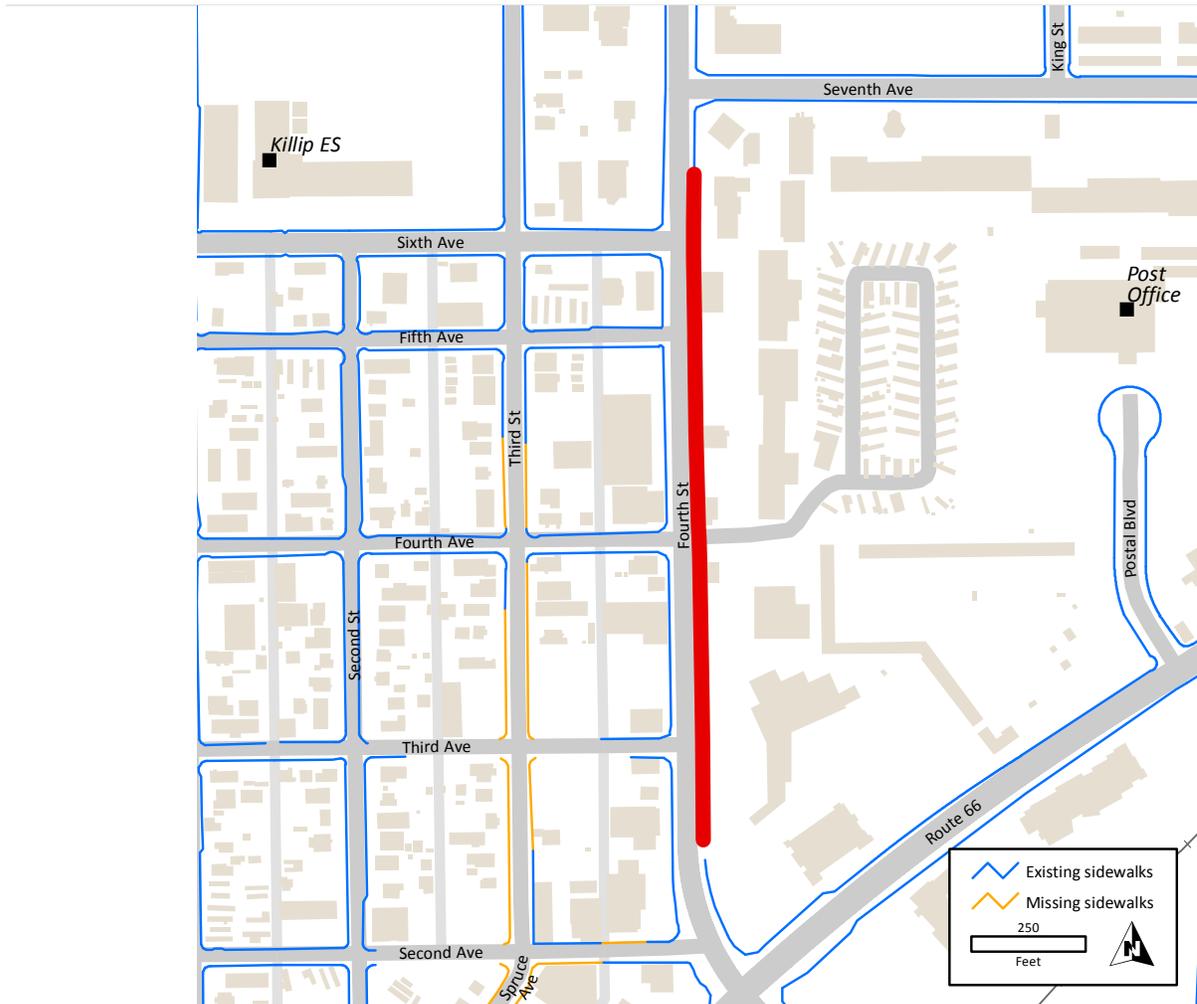
Length 145 linear feet

Cost est \$15,237

Considerations ■ Will require removal of existing landscaping

Major sidewalk projects

Project **108 Sidewalk – Fourth St 2**



Location East side of Fourth Street, between Route 66 and Seventh Avenue

Category Sidewalk - major **Score** 244.3

Length 1461 linear feet **Cost est** \$135,579

- Considerations**
- Additional right-of-way is needed
 - Parking lot can be restriped to create additional room and avoid the loss of parking
 - May be pinch points between existing buildings and street
 - A buffer should be provided between interior parking and sidewalk to keep vehicles from encroaching into the sidewalk
 - The sidewalk will cross several driveways that should be rebuilt to current standards

Project **142 Sidewalk – San Francisco St 2**



Location Both sides of San Francisco St between Hunt and DeSilva

Category Sidewalk - major **Score** 211.2

Length 1094 linear feet **Cost est** \$144,726

- Considerations**
- There is no curb-and-gutter adjacent to the missing sidewalk
 - There are moderate slopes behind the curb on the east side; retaining walls may be needed
 - Existing Ponderosa pines and other trees may be affected
 - May necessitate removal of informal parking spaces

Project **146 Sidewalk - Steves-Lakin**



Location Both sides of Steves Boulevard, between Route 66 and Lewis Dr; both sides of Lakin Drive, west of Steves Blvd

Category Sidewalk - major	Score 189.0
Length 1573 linear feet	Cost est \$153,804

- Considerations**
- A buffer should be provided between interior parking lots and the sidewalk to keep vehicles from encroaching into the sidewalk
 - Will require removal of existing landscaping
 - May necessitate removal or realignment of existing parking spaces

Project **081 Sidewalk - Beaver St**



Location Both sides of Beaver Street, between Forest Avenue and Cedar Avenue

Category Sidewalk - major

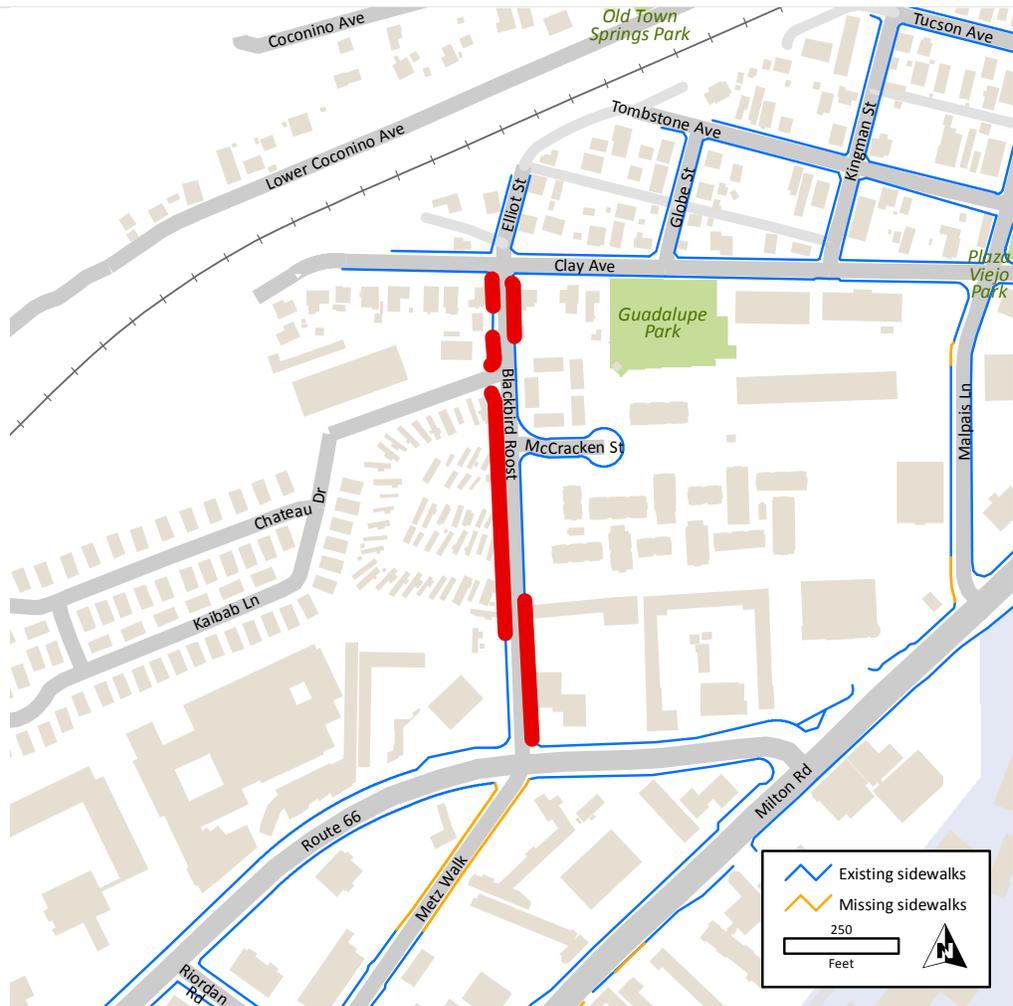
Score 172.3

Length 1213 linear feet

Cost est \$173,136

- Considerations**
- Some existing landscaping and other feature may be affected
 - There is no curb-and-gutter adjacent to the missing sidewalk
 - The sidewalk will cross several driveways that should be rebuilt to current standards
 - May require additional right-of-way
 - May necessitate removal of informal parking spaces

Project 083 Sidewalk - Blackbird Roost



Location Both sides of Blackbird Roost, between Route 66 and Clay Avenue

Category Sidewalk - major **Score** 170.7

Length 1077 linear feet **Cost est** \$117,000

- Considerations**
- Some existing landscaping may be affected
 - The sidewalk will cross several driveways that should be rebuilt to current standards
 - A buffer should be provided between interior parking and sidewalk to keep vehicles from encroaching into the sidewalk
 - May necessitate realignment of existing parking spaces
 - May be conflicts with existing utility boxes and poles

Project 106 Sidewalk - Forest Meadows St 2



Location East side of Forest Meadows Street, between Highland Mesa Road and University Avenue

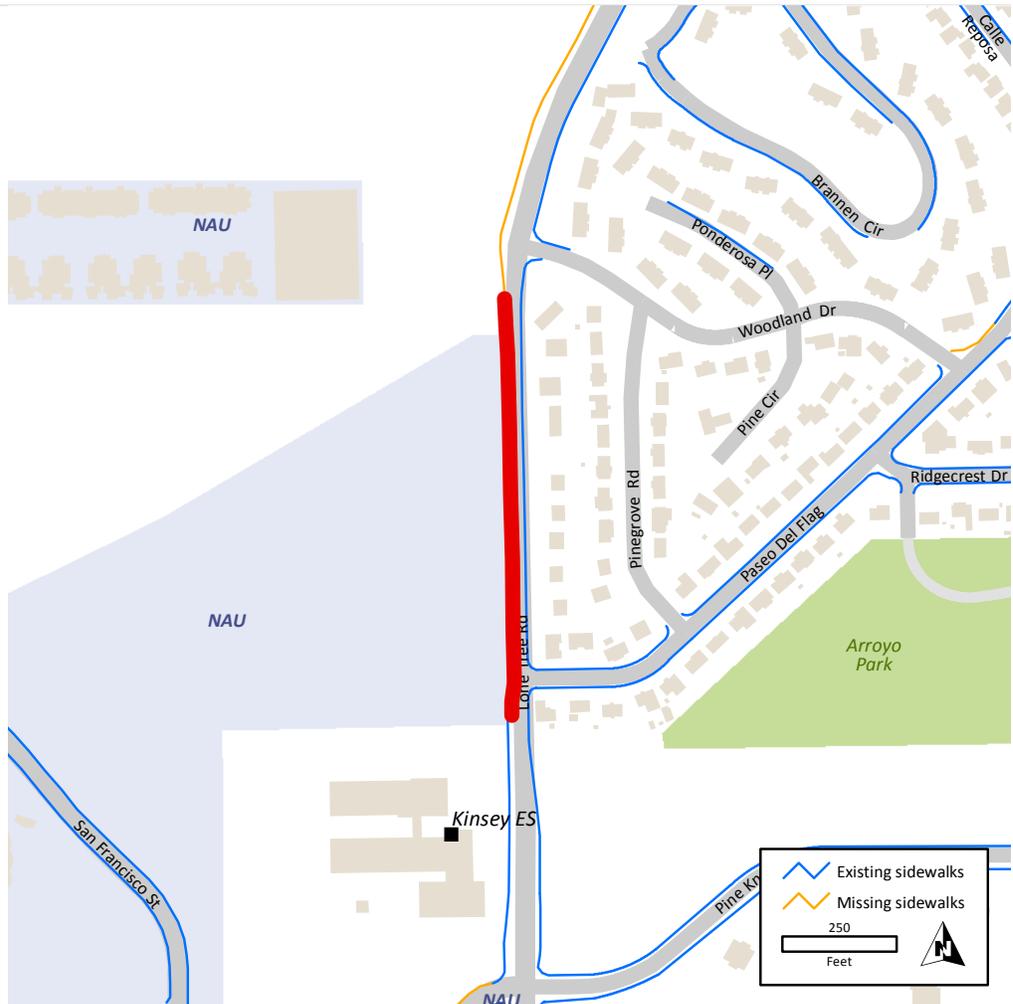
Category Sidewalk - major **Score** 142.3

Length 1711 linear feet **Cost est** \$105,798

- Considerations**
- Some existing landscaping may be affected
 - There are moderate slopes beyond the street edge; retaining walls may be needed
 - May require additional right-of-way
 - May be conflicts with existing utility boxes
 - May be conflicts with existing drainage features

FUTS projects

Project **009 FUTS – Lone Tree Trail S**



Location West side of Lone Tree Rd, between Woodland and Paseo del Flag

Category FUTS project (construct)

Score 211.2

Length 915 linear feet

Cost est \$219,307

- Considerations**
- There is no curb-and-gutter adjacent to the missing sidewalk
 - An easement will be required from NAU
 - May necessitate removal of informal parking spaces
 - There are moderate slopes beyond the street edge; retaining walls may be needed

Project **013 FUTS - Sinclair Wash Trail 1**



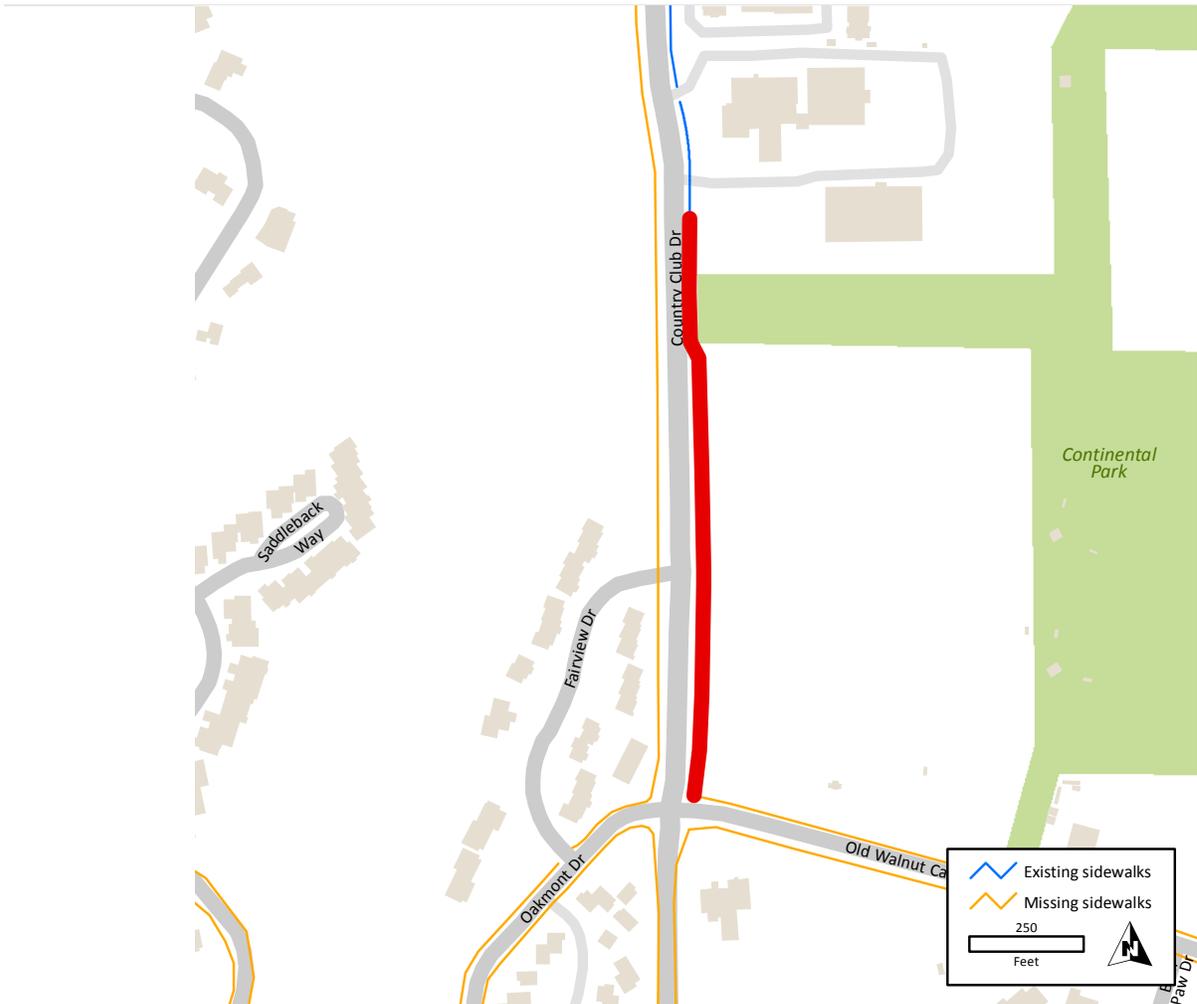
Location North side of McConnell Drive, between I-17 and Knoles Dr

Category FUTS project (pave) **Score** 195.4

Length 1001 linear feet **Cost est** \$240,033

- Considerations**
- Pedestrian access to the intersection and curb ramps should be included in the project
 - Will be some grade issues for pedestrian access to the intersection

Project **003 FUTS - Country Club Trail N**



Location East side of Country Club Drive, between Old Walnut Canyon Drive and Flagstaff Athletic Center

Category FUTS project (construct) **Score** 179.9

Length 1273 linear feet **Cost est** \$305,326

- Considerations**
- Additional right-of-way is needed
 - There is no curb-and-gutter along the street where sidewalk is missing
 - May require fencing between FUTS trail and golf driving range

Project **014 FUTS - Southwest Crossing Trail**



Location South side of Forest Meadows Street. West of Woodlands Village Boulevard

Category FUTS project (construct)

Score 157.0

Length 255 linear feet

Cost est \$51,904

- Considerations**
- There is a drainage channel parallel to the street that may be affected
 - May require additional right-of-way